

ALESIS

DM PRO™
20-BIT 64 VOICE EXPANDABLE DRUM MODULE

**REFERENCE
MANUAL**

Alesis DM Pro™ Reference Manual
by Erik Norlander

Additional documentation by Randy Lee

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IMPORTANT SAFETY INSTRUCTIONS

SAFETY SYMBOLS USED IN THIS PRODUCT



This symbol alerts the user that there are important operating and maintenance instructions in the literature accompanying this unit.



This symbol warns the user of uninsulated voltage within the unit that can cause dangerous electric shocks.

PLEASE FOLLOW THESE PRECAUTIONS WHEN USING THIS PRODUCT:



1. Read these instructions.

2. Keep these instructions.
3. Heed all warnings.
4. Follow all instructions.
5. Do not use this apparatus near water.
6. Clean only with a damp cloth. Do not spray any liquid cleaner onto the faceplate, as this may damage the front panel controls or cause a dangerous condition.
7. Install in accordance with the manufacturer's instructions.
8. Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.
9. Do not defeat the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades with one wider than the other. A grounding-type plug has two blades and a third grounding prong. The wide blade or the third



Important Safety Instructions

prong are provided for your safety. When the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.

10. Protect the power cord from being walked on or pinched, particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.

11. Use only attachments or accessories specified by the manufacturer.



12. Use only with a cart, stand, bracket, or table designed for use with professional audio or music equipment. In any installation, make sure that injury or damage will not result from cables pulling on the apparatus and its mounting. If a cart is used, use caution when moving the cart/apparatus combination to avoid injury from tip-over.

13. Unplug this apparatus during lightning storms or when unused for long periods of time.



14. Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as when the power-supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.

15. This unit produces heat when operated normally. Operate in a well-ventilated area.

16. This product, in combination with an amplifier and headphones or speakers, may be capable of producing sound levels that could cause permanent hearing loss. Do not operate for a long period of time at a high volume level or at a level that is uncomfortable. If you experience any hearing loss or ringing in the ears, you should consult an audiologist.

INSTRUCTIONS DE SÉCURITÉ IMPORTANTES (FRENCH)

SYMBOLES UTILISÉS DANS CE PRODUIT



Ce symbole alerte l'utilisateur qu'il existe des instructions de fonctionnement et de maintenance dans la documentation jointe avec ce produit.



Ce symbole avertit l'utilisateur de la présence d'une tension non isolée à l'intérieur de l'appareil pouvant engendrer des chocs électriques.

VEUILLEZ SUIVRE CES PRÉCAUTIONS LORS DE L'UTILISATION DE L'APPAREIL:



1. Lisez ces instructions.

2. Gardez ces instructions.
3. Tenez compte de tous les avertissements.
4. Suivez toutes les instructions.
5. N'utilisez pas cet appareil à proximité de l'eau.
6. Ne nettoyez qu'avec un chiffon humide. Ne pas vaporiser de liquide nettoyant sur l'appareil, cela pourrait abîmer les contrôles de la face avant ou engendrer des conditions dangereuses.
7. Installez selon les recommandations du constructeur.
8. Ne pas installer à proximité de sources de chaleur comme radiateurs, cuisinière ou autre appareils (don't les amplificateurs) produisant de la chaleur.
9. Ne pas enlever la prise de terre du cordon secteur. Une prise murale avec terre deux broches et une troisième reliée à la terre. Cette dernière est présente pour votre sécurité. Si le cordon secteur ne rentre pas dans la prise de courant, demandez à un électricien qualifié de remplacer la prise.
10. Evitez de marcher sur le cordon secteur ou de le pincer, en particulier au niveau de la prise, et aux endroits où il sort de l'appareil.
11. N'utilisez que des accessoires spécifiés par le constructeur.

Important Safety Instructions

12. N'utilisez qu'avec un stand, ou table conçus pour l'utilisation d'audio professionnel ou instruments de musique. Dans toute installation, veillez de ne rien endommager à cause de câbles qui tirent sur des appareils et leur support.
13. Débranchez l'appareil lors d'un orage ou lorsqu'il n'est pas utilisé pendant longtemps.
14. Faites réparer par un personnel qualifié. Une réparation est nécessaire lorsque l'appareil a été endommagé de quelque sorte que ce soit, par exemple lorsque le cordon secteur ou la prise sont endommagés, si du liquide a coulé ou des objets se sont introduits dans l'appareil, si celui-ci a été exposé à la pluie ou à l'humidité, ne fonctionne pas normalement ou est tombé.
15. Cet appareil produit de la chaleur en fonctionnement normal.
16. Ce produit, utilisé avec un amplificateur et un casque ou des enceintes, est capable de produire des niveaux sonores pouvant engendrer une perte permanente de l'ouïe. Ne l'utilisez pas pendant longtemps à un niveau sonore élevé ou à un niveau non confortable. Si vous remarquez une perte de l'ouïe ou un bourdonnement dans les oreilles, consultez un spécialiste.

**BEIM BENUTZEN DIESES PRODUKTES BEACHTEN
SIE BITTE DIE FOLGENDEN SICHERHEITSHINWEISE:
(GERMAN)**



1. Lesen Sie die Hinweise.

2. Halten Sie sich an die Anleitung.
3. Beachten Sie alle Warnungen.
4. Beachten Sie alle Hinweise.
5. Bringen Sie das Gerät nie mit Wasser in Berührung.
6. Verwenden Sie zur Reinigung nur ein weiches Tuch. Sprühen Sie keine flüssiger Reiniger auf die Oberfläche, dies könnte zur Beschädigung der Vorderseite führen und auch weitere Schäden verursachen.
7. Halten Sie sich beim Aufbau des Gerätes an die Angaben des Herstellers.
8. Stellen Sie das Gerät nicht in der Nähe von Heizkörpern, Heizungsklappen oder anderen Wärmequellen (einschließlich Verstärkern) auf.
9. Verlegen Sie das Netzkabel des Gerätes niemals so, daß man darüber stolpern kann oder daß es gequetscht wird.
10. Benutzen Sie nur das vom Hersteller empfohlene Zubehör.
11. Verwenden Sie ausschließlich Wagen, Ständer, oder Tische, die speziell für professionelle Audio- und Musikinstrumente geeignet sind. Achten Sie immer darauf, daß die jeweiligen Geräte sicher installiert sind, um Schäden und Verletzungen zu vermeiden. Wenn Sie einen Rollwagen benutzen, achten Sie darauf, das dieser nicht umkippt, um Verletzungen auszuschließen.
12. Ziehen Sie während eines Gewitters oder wenn Sie das Gerät über einen längeren Zeitraum nicht benutzen den Netzstecker aus der Steckdose.
13. Die Wartung sollte nur durch qualifiziertes Fachpersonal erfolgen. Die Wartung wird notwendig, wenn das Gerät beschädigt wurde oder aber das Stromkabel oder der Stecker, Gegenstände oder Flüssigkeit in das Gerät gelangt sind, das Gerät dem Regen oder Feuchtigkeit ausgesetzt war und deshalb nicht mehr normal arbeitet oder heruntergefallen ist.
14. Bei normalem Betrieb des Gerätes kommt es zu Wärmeentwicklungen.
15. Dieses Produkt kann in Verbindung mit einem Verstärker und Kopfhörern oder Lautsprechern Lautstärkepegel erzeugen, die anhaltende Gehörschäden verursachen. Betreiben Sie es nicht über längere Zeit mit hoher Lautstärke oder einem Pegel, der Ihnen unangenehm is. Wenn Sie ein Nachlassen des Gehörs oder ein Klingeln in den Ohren feststellen, sollten Sie einen Ohrenarzt aufsuchen.

CE DECLARATION OF CONFORMITY

Manufacturer's Name: Alesis Corporation

Manufacturer's Address: 1633 26th Street
Santa Monica, CA 90404
USA

declares, that the product:

Product Name: DM Pro
Model Type: Sample Playback Module with Trigger Inputs

conforms to the following Standards:

EMC: EN55022:1995 Class B; EN50082-1:1992

Safety: EN 60065

European Contact: Sound Technology plc
Letchworth Point, Letchworth,
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UNITED KINGDOM

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December, 1998

WELCOME TO THE DM PRO

Congratulations on your purchase of the Alesis DM Pro! You are now the owner of a powerful drum and percussion synthesizer that will give you many years of use and enjoyment.

This manual contains several specific sections designed to teach you as much as possible about each area of your module. However, we strongly suggest that you begin your relationship with DM Pro by completing our Brief "Hands On" Tutorial. This tutorial will give you an excellent overview of the product and will quickly help you to get acquainted with its system architecture.

PACKING LIST

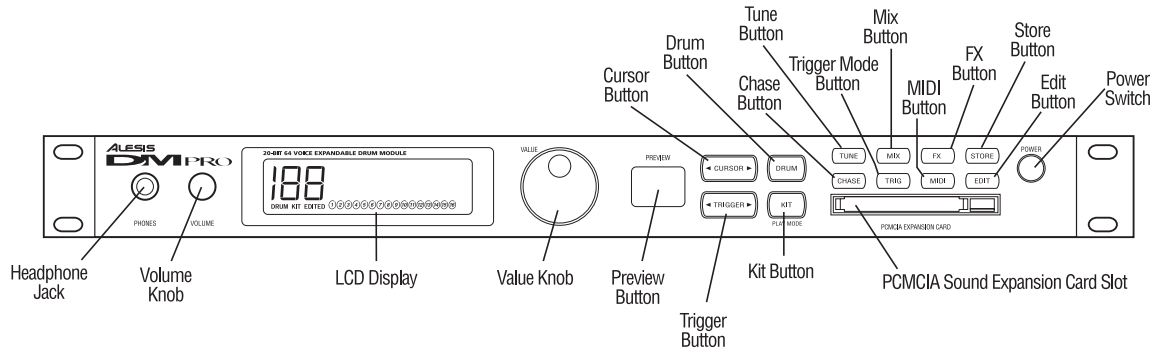
Your DM Pro was packed carefully at the factory. The shipping carton was designed to protect the unit during shipping. Please retain this container in the highly unlikely event that you need to return the DM Pro for servicing. The DM Pro ships from the factory with the following items:

- 1 **DM Pro Drum Module with the same serial number as shown on the shipping carton**
- 1 **External AC Power Supply Adapter**
- 1 **DM Pro Reference Manual**
- 1 **DM Pro Drum List**
- 1 **DM Pro Kit List**
- 1 **Alesis warranty card**



It is important to register your purchase; if you have not already filled out your warranty card and mailed it back to Alesis, please take the time to do so now.

DM PRO FRONT PANEL

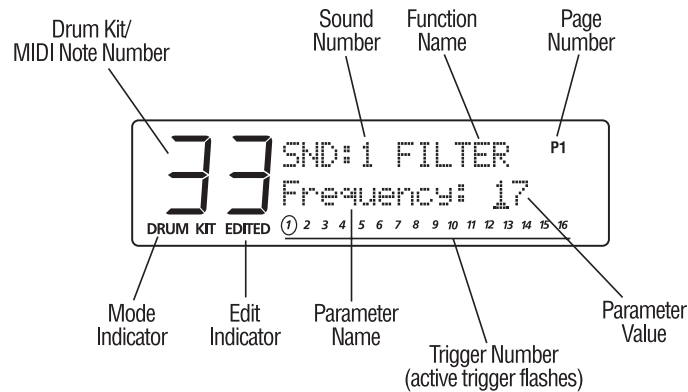


PHONES jack	plug in stereo headphones to hear the DM Pro's output
VOLUME knob	controls master volume
LCD	custom graphic display shows Drum, Drumkit and Trigger Functions, Parameters and Values
VALUE encoder	use this to select or adjust the Function, Parameter or Value that is above the cursor
PREVIEW button	press this to audition Drums from the front panel
CURSOR < > buttons	use these to select the Function, Parameter or Value you wish to edit
DRUM	press this to select the Drum or MIDI Note Number that you wish to edit
TRIGGER < > buttons	use these to select which of the 16 external trigger inputs you wish to edit
KIT	press this to return to the top level of the DM Pro (Drumkit Mode) or to load a Drumkit from memory
TUNE	press this to adjust the pitch of a Drum within a Drumkit
MIX	press this to adjust the output characteristics of a Drum within a Drumkit. Parameters include Volume, Pan, Output Assignment, FX Level, FX Buss, Mute Group, Drum Link and Drum Enable
FX	press this to adjust the Parameters of the five Effects Functions (Reverb, Overdrive, Delay, Pitch and EQ)
STORE	press this button to access the Store Functions which include Save, Copy, Initialize and Send (MIDI transmit)
CHASE	use this Function to select MIDI Note Numbers by playing notes on an external controller (MIDI or Trigger)
TRIG	press this button to edit all Parameters associated with the external triggers. Note that different trigger Parameters exist in Trigger Mode and Drumkit Mode.
MIDI	use this Function to set the Basic and individual MIDI Channels for MIDI Notes, define Controller and Pedal behavior, enable or disable the transmission of Sequence Start commands, and enable or disable the transmission and reception of Program Change commands

EDIT

press this to enter Drum Edit Mode or name a Drumkit.

DM PRO DISPLAY



This “screen shot” is taken from Drum Edit mode. It contains many of the elements which will be encountered in the various modes of the DM Pro.

Drumkit/MIDI Note Number: The large numbers indicate the present Drumkit or MIDI Note Number, depending on which mode you are in. If the DM Pro is in Drum Edit mode and the [CHASE] button is lit, striking a Trigger or a note on a MIDI controller will cause the MIDI Note Number to change.

Sound Number: Seen only in Drum Edit Mode, SND:1 indicates that Sound 1 within the Drum is currently being edited. There are four Sounds within each Drum. If a Sound is not active, it will be represented by snd:1 instead.

Function Name: Tells you which Function has been selected for editing.

Page Number: Indicates which Page within the Function is currently being viewed on the bottom line of the display.

Mode Indicator: This area of the screen will display either the word “DRUM” or the words “DRUM” and “KIT”, depending on which mode you are in.

Edit Indicator: If you see the word “EDIT” here, you have entered either Drumkit Edit or Drum Edit mode, but you have not yet altered a value. Once you alter a parameter within the current Drum or Drumkit, the word changes to “EDITED.”

Parameter Name: The word displayed here tells you which Parameter you will be editing if you change the Value.

Trigger Number: After pressing [TRIG] you will see one of these numbers flashing to indicate which Trigger Input you are currently editing. Also, a circle will appear around the number if its Trigger Input has received a strong enough signal. No numbers will flash if you have selected a Trigger parameter which pertains to the entire Trigger Setup.

Parameter Value: Changing this area of the screen with the Value encoder will edit the currently selected Parameter. This area of the screen can also display a word or words as your value options, depending on the Parameter you have selected.

AC POWER HOOKUP

The DM Pro comes with a power adapter suitable for the voltage of the country to which it is shipped (either 110 or 220V, 50 or 60 Hz). With the DM Pro off, plug the DIN connector of the power adapter cord into the DM Pro's [POWER] socket and the male (plug) end into a source of AC power. It's good practice to not turn the DM Pro on until all other cables are hooked up.



Note that Alesis cannot be responsible for problems caused by using the DM Pro or any associated equipment with improper AC wiring.

LINE CONDITIONERS AND PROTECTORS

Although the DM Pro is designed to tolerate typical voltage variations, in today's world the voltage coming from the AC line may contain spikes or transients that can possibly stress your gear and, over time, cause a failure. There are three main ways to protect against this, listed in ascending order of cost and complexity:

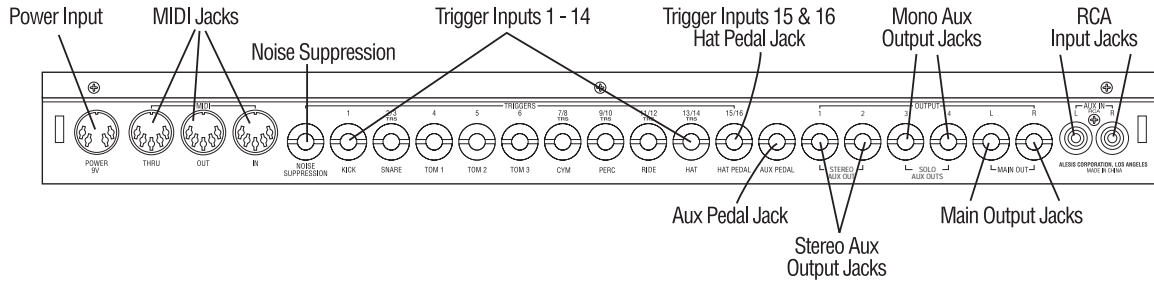
- Line spike/surge protectors. Relatively inexpensive, these are designed to protect against strong surges and spikes, acting somewhat like fuses in that they need to be replaced if they've been hit by an extremely strong spike.
- Line filters. These generally combine spike/surge protection with filters that remove some line noise (dimmer hash, transients from other appliances, etc.).
- Uninterruptible power supply (UPS). This is the most sophisticated option. A UPS provides power even if the AC power line fails completely. Intended for computer applications, a UPS allows you to complete an orderly shutdown of a computer system in the event of a power outage, and the isolation it provides from the power line minimizes all forms of interference—spikes, noise,

ABOUT AUDIO CABLES

The connections between the DM Pro and your studio are your music's lifeline, so use only high quality cables. These should be low-capacitance shielded cables with a stranded (not solid) internal conductor and a low-resistance shield. Although quality cables cost more, they do make a difference. Route cables to the DM Pro correctly by observing the following precautions:

- Do not bundle audio cables with AC power cords.
- Avoid running audio cables near sources of electromagnetic interference such as transformers, monitors, computers, etc.
- Do not place cables where they can be stepped on. Stepping on a cable may not cause immediate damage, but it can compress the insulation between the center conductor and shield (degrading performance) or reduce the cable's reliability.
- Avoid twisting the cable or having it make sharp, right angle turns.
- Never unplug a cable by pulling on the wire itself. Always unplug by firmly grasping the body of the plug and pulling directly outward.
- Although Alesis does not endorse any specific product, chemicals such as Tweek and Cramolin, when applied to electrical connectors, are claimed to improve the electrical contact between connectors.

AUDIO CONNECTIONS



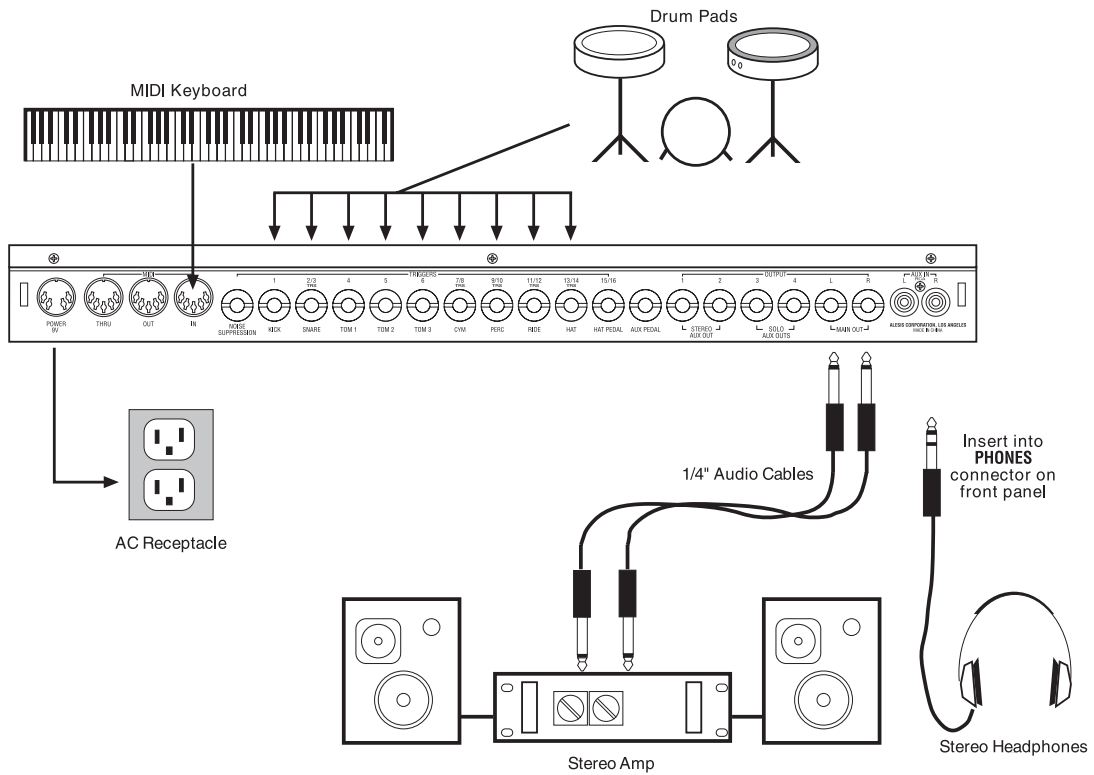
When connecting audio cables and/or turning the power on and off, make sure that the volume controls in your system are turned down.

The rear panel of the DM Pro has two Main and four Auxiliary audio outputs along with two RCA inputs. There is also a headphone output on the front panel. The outputs can provide an amplification system or mixer with several different audio connection options:

- | | |
|------------------------|---|
| MONO | Connect a mono patch cord from either the [MAIN OUT-L] or the [MAIN OUT-R] to a mono amplification system or individual mixer input. |
| STEREO | Connect two mono patch cords from the [MAIN OUT -L] and [MAIN OUT -R] to a stereo amplification system or two mixer inputs. Make sure that your mixer inputs are panned hard left and right in order to realize the stereo effect. |
| SIX INDIVIDUAL
OUTS | Connect two mono patch cords from the [MAIN OUT -L] and [MAIN OUT -R] and four mono patch cords from the [STEREO AUX OUTS 1/2], [SOLO AUX OUT 3] and [SOLO AUX OUT 4] to six mixer inputs. Note that the DM Pro Effects Processor only plays out of the MAIN OUTPUTS. |
| STEREO
HEADPHONES | Plug a set of high quality stereo headphones into the front panel [PHONES] jack. |
| RCA AUX
INPUTS | These jacks will let you run the stereo audio output of a CD or cassette player through the DM Pro's main or headphone outputs. Use it for mixing audio tracks in with your performance, or for practicing along with your favorite music! Control the volume of the music from the CD/cassette player. |

Tip: For the Main and Auxiliary Output jacks, either balanced or unbalanced 1/4" cables may be used.

CONNECTIONS CHART



MIDI CONNECTIONS

If you are using a MIDI keyboard or sequencer, connect its [MIDI OUT] to the [MIDI IN] of the DM Pro. If you have another device that you wish to control from the same keyboard or sequencer, connect the [MIDI THRU] of the DM Pro to the [MIDI IN] of the other device. If you wish to store your edited Drums and Drumkits to a computer or other data storage device (or use an external editor such as Mark of the Unicorn's Unisyn), connect the [MIDI OUT] of the DM Pro to the [MIDI IN] of the computer or other data storage device.

EXTERNAL TRIGGER CONNECTIONS

Plug all of the trigger outputs you will be using into the Trigger jacks on the rear of the DM Pro. The DM Pro has recommended locations for each type of trigger (Kick, Snare, Hi-hats, etc.) silk-screened below each Trigger jack. Although it is recommended that you use these locations, any trigger output can be plugged into any Trigger jack and programmed to perform as required (except for Trigger Inputs 15 and 16). For more about the Trigger section, see “Chapter 7: Triggers” and “Appendix B: Advanced Trigger Information.”



IMPORTANT NOTE! Trigger Inputs 15 and 16 are not normal Trigger inputs. They share a mono input jack, which is designed as a Pedal input for use in conjunction with Triggers 13 and 14 for Hi-Hat emulation. If you plug in a Trigger pad of some sort you will get no response. For more information, see page 113 “The Interactive Hi-Hat Performance.”

The default Trigger Note Assignments for the most part* follow the General MIDI Standard Drum Layout:

TRIGGER	NOTE NAME	NOTE #	DRUM
1	C_1	36	Kick Drum
2	D_1	38	Snare Drum
3	C#1	37	Crosstick
4	C_2	48	Tom 1 (Hi Rack)
5	A_1	45	Tom 2 (Low Rack)
6	F_1	41	Tom 3 (Floor)
7	C#2	49	Cymbal 1 (Crash 1)
8	A_2	57	Cymbal 2 (Crash 2)
9	F#4	54	Perc 1 (Tambourine)
10	G#4	56	Perc 2 (Cowbell)
11	D#2	51	Ride Cymbal
12	F_2	53	Ride Bell
13 Pedal Down	F#1	42	Hi-hat Center Closed
13 Pedal Up	A#1	46	Hi-hat Center Open
14* Pedal Down	A#5	94	Hi-hat Edge Closed
14* Pedal Up	B_5	95	Hi-hat Edge Open
15	G#1	44	Hi-hat Foot Down
16*	C_6	96	Hi-hat Foot Up

* not part of the General MIDI Standard Drum Layout

See the graphic on page 43 for a visual representation of the Trigger/MIDI Note Number relationship.

A BRIEF HANDS-ON TUTORIAL

To get started immediately, follow these quick steps. Then, at your leisure, read through the rest of the manual to learn more about the operation and inner workings of the module. The more you know about your DM Pro, the more power you will be able to get out of it. This chapter alone is by no means intended to be a complete explanation of the unit.



EDIT WARNING: Please **DO NOT** press the **EDIT** button until *after* you have read “Chapter 6: Programming Drums”! The Functions under the **EDIT** button are for advanced programming use only. For most DM Pro applications, you will never need to press this button. But if you are inclined towards in - depth programming, please read Chapter 6 first to get the most out of these advanced functions.

PLAYING THE DEMOS

To give you an idea of the kind of musical power the DM Pro contains, we have included four “Autodemos”. These compositions cover a variety of musical styles, and illustrate how the DM Pro lends itself to many different environments.

Here’s how to select and play one of the Autodemos:

1. Press and hold the [KIT] button.
2. While still holding the [KIT] button, press the [< CURSOR] button. You will see a screen that looks like this:

Play Autodemo 1

<STORE>

3. Using the VALUE wheel, select a number between 1 and 4.
4. Press [STORE]. The screen will indicate that the DM Pro is playing the Autodemo you selected. You can stop the Autodemo at any time by pressing the [KIT] button.



To begin the tutorial, first plug in your DM Pro per the connections described in the "Connections Chart" in the previous chapter.

BASIC MIDI SETUP

Set the Basic MIDI Channel to receive incoming data on your desired channel by pressing MIDI, and then turning the VALUE encoder clockwise to select Page 1. The display will read:

Basic Channel:01

Global Edit ^{P1}

Press the CURSOR > button once so that the cursor moves beneath the channel number:

Basic Channel:0 1

Global Edit ^{P1}

Now adjust the number to your desired MIDI Channel setting using the VALUE encoder.

Tip: General MIDI always uses MIDI Channel 10 for drums, so setting the Basic Channel to 10 is usually a good starting place. Also, if you are using the DM Pro in a MIDI environment, make sure that your controller is set to transmit on the same MIDI channel to which you set the DM Pro.

SELECTING AND AUDITIONING DRUMKITS

Drumkit Mode is the top level of the DM Pro. There are 64 internal Drumkits, all of which can be edited and overwritten to suit your own particular applications. The currently selected Drumkit will respond to incoming MIDI or trigger information at all times, regardless of the state of the DM Pro.

To select a Drumkit to audition, press the KIT button to jump to the top level of Drumkit Mode. The top level of Drumkit Mode displays the name of the Drumkit in quotation marks on the top line of the display and nothing on the bottom line:

“RealProKit”

Play notes between A0 (MIDI Note # 33) and C6 (MIDI Note # 96) from your controller to hear the current Drumkit. Turn the VALUE encoder to select any of the 64 different Drumkits, and then press the KIT button again to “Load” the Drumkit of your choice into the “Play Memory” of the DM Pro. Because Drumkits contain so much information, they must be individually loaded into the Play Memory after selecting them rather than simply just selected.

If the Drumkit number and the KIT button are flashing, the Drumkit currently shown on the display has not yet been loaded – the previously loaded Drumkit still resides in the Play Memory and will sound until you press KIT to load the new Drumkit.

SELECTING INDIVIDUAL DRUMS WITHIN A DRUMKIT

Individual drum and percussion sounds are called “Drums” in the DM Pro.

Each of the 64 Drumkits in turn contain 64 Drums. A Drum is assigned to each of the 64 MIDI Notes across the most commonly used controller range: A0 (MIDI Note # 33) through C6 (MIDI Note # 96), which just slightly exceeds the range of a 5 octave keyboard. Note that Alesis refers to middle C as “C3” and not “C4”. You should be aware that some other manufacturers such as Korg, Roland and Digidesign refer to middle C as “C4”.

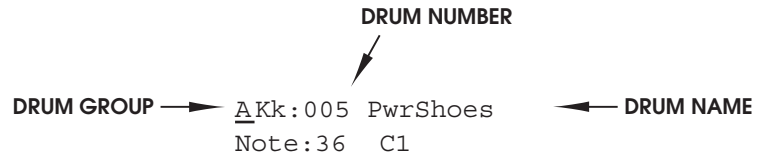
1. To change Drums, press the DRUM button. Now press the CHASE button so that it lights, and then play a note from your controller. The display will show the MIDI Note Number of the note you just played along with the Drum that is currently assigned to that MIDI Note.

Alternatively, if you do not wish to use the CHASE Function, press DRUM, and then move the CURSOR beneath the MIDI Note Number. Now you can select the MIDI Note with the VALUE encoder:

AKk:005 PwrShoes

Note:36 C1

Drums are displayed with their three character “Drum Group” followed by the “Drum Number” followed by the “Drum Name”:



2. To choose a different Drum for the currently selected MIDI Note, press DRUM which will take you to the Drum Select Function. The cursor defaults to the Drum Group parameter out of the box or after a re-initialization. Drum Groups refer to the type of Drum (acoustic kicks, electronic snares, hi-hats, sound effects, etc.) and are simply category labels to help you more quickly find the sound you desire.

To change the Drum Group, make sure it is underlined by the cursor and turn the VALUE encoder to select one of the 13 various Drum Groups.

3. Once you have selected a Drum Group, or if you are happy with the current Drum Group, press the CURSOR > button once so that the cursor moves beneath the Drum Number:

AKk:005 PwrShoes
Note:36 C1

Now turn the VALUE encoder to select the Drum you prefer within the current Drum Group.



Note that the Drum Number and the Drum Name are permanently linked – you cannot alter this. The Drum Number and the Drum Name are just two ways of referring to the same Drum to help you more quickly and easily identify specific Drums.

4. Next, to adjust the output characteristics of a Drum, press the MIX button. The top line of the display shows the MIX Parameter for the MIDI Note location displayed on the bottom line:

Drum Volume:99
Note:36 C1 P1

To change the Value of the Parameter, press CURSOR > so that the cursor is beneath the Parameter Value:

Drum Volume:99
Note:36 C1 P1

- You can now adjust the Drum's volume level with the VALUE encoder. Press < CURSOR to move the cursor back beneath the Drum Volume Parameter:

Drum Volume:99
Note:36 C1 P1

Now the VALUE encoder will select another Parameter to edit. For example, turn the VALUE once clockwise to display the Drum Pan Parameter:

Drum Pan: PROG
Note:36 C1 P2

Within the MIX Function, you can adjust the Volume, Pan, Output Assignment, FX Send Level, FX Buss Assignment, Mute Group and Drum Link Parameters. For more information about these Parameters, see “Chapter 4: Programming Drumkits”.

5. With the CHASE button still lit, play another note from your controller to select another DRUM. Using the same procedure as outlined in steps 1 - 4, move the VALUE encoder to choose your desired Drum for this note. Play additional notes and repeat the process until you are satisfied with the Drums across your controller's range. By repeating these simple steps, you can create a custom Drumkit.

SAVING CHANGES TO A DRUMKIT

To save the changes to your Drumkit, press STORE once. The display will read:

Save Drumkit to:

USER 00

Notice that the cursor is under the Drumkit number. Using the VALUE encoder, select the location where you wish to store your edited Drumkit.



WARNING! Storing your edited Drumkit will erase the Drumkit that currently resides in this location, so make your selection carefully.

- If you are certain that you wish to overwrite your edited Drumkit into the location you have selected and erase the Drumkit currently in that location, press STORE a second time.
- If you wish to discard your edits, press KIT at any time and you will return to the main Drumkit page where you can select and load another Drumkit without overwriting anything.

For more detailed information on editing Drumkits, see "Chapter 4: Programming Drumkits".

PROGRAMMING EFFECTS

All of the Effects Functions and Parameters are stored within a Drumkit. Inside the Drumkit, each of the 64 MIDI Notes has its own Effects Send Level and Effects Buss Assignment, both of which are independent of the Drum assigned to that MIDI Note. In other words, if you simply change the Drum on C3 (MIDI Note # 60), the Effects Send Level and the Effects Buss Assignment for the MIDI Note C3 will remain unchanged – the new Drum will simply go through that MIDI Note’s effects routing.

There are two Effects Busses in the DM Pro: the Reverb Buss and the Multi-Effects Buss. The Multi-Effects Buss consists of an Overdrive effect, a Delay effect, and a Pitch effect which can be set to a Chorus, a Flanger or a Resonator. The outputs of the Multi-Effects Buss can also be sent to the Reverb Buss, but these routings must be made from within the Effects Functions themselves. There is also an EQ Function which is independent of Buss Assignment – it is global to the Drumkit.

Changing the effects of a Drumkit is much like changing the effects of a multitrack mix: you must first set the Buss Assignments and Send Levels to the Effects, and then you can edit the Effects themselves.

SETTING THE EFFECTS BUSS ASSIGNMENTS AND SEND LEVELS

Each MIDI Note is always assigned to either the Reverb Buss OR the Multi-Effects Buss. The Drum assigned to a MIDI Note is then processed through the selected buss.



Again, to select a MIDI Note in the DM Pro, use either the CHASE button and play the MIDI Note from your controller, or press DRUM and then move the CURSOR to select the Note with the VALUE encoder.

1. To change the Effects Buss Assignment of a Note, press MIX and use [C CURSOR >] to underline the Mix Parameter in the upper left hand corner. Then rotate the Value encoder clockwise until you reach Page 5, which is the Effects Buss Assignment Parameter. The display will read:

```
FX Bus:REVERB
Note:36 C1 P5
```

Using CURSOR >, move the cursor under the word REVERB:

```
FX Bus:REVERB
Note:36 C1 P5
```

Now by using the VALUE encoder, you can toggle between the Reverb Buss and the OD>DL>PCH Buss. Note that in the display, the Multi-Effects Buss is indicated by its signal flow:

```
FX Bus:OD>DL>PCH
Note:36 C1 P5
```

The OD>DL>PCH Buss is a “multi-effects” buss consisting of an Overdrive effect followed by a Delay effect followed by a Pitch effect, which can be configured as a Chorus, Flanger or Resonator effect.

OD Overdrive
DL Delay
PCH Pitch (Chorus, Flanger or Resonator)

If you select a MIDI Note that is already assigned to the Multi-Effects Buss, turning the VALUE encoder will likewise toggle the Effects Buss Assignment back to the Reverb Buss.

2. Now that we have made our Effects Buss Assignment, we must next set Effects Send Levels for each MIDI Note. To set Effects Send Level for a MIDI Note, move the cursor back under the FX Bus parameter so that the display reads:

FX Bus:OD>DL>PCH
Note:36 C1 P5

Now turn the VALUE encoder counterclockwise once to reach the Effects Send Level page, which is Page 4 of the MIX function. The display will read:

FX Level: 60
Note: 36 C1 P4

3. Press the CURSOR > button once so that the cursor is under the send level amount:

FX Level: 60
Note:36 C1 P4

Now turn the VALUE encoder to set the amount of signal that is sent to the Effects Processor. To make a Drum totally dry (no effects), set the value to 00. To make a Drum sound more processed (lots of effects), set the value to 99.

Repeat steps 1 - 3 for each Drum whose Effects Assignment you wish to change.

EDITING THE EFFECTS THEMSELVES

Now that you have set the Buss Assignments and Send Levels into the Effects Processor, you can now edit the actual effects. There are five Effects Functions: REVERB, OVERDRIVE, DELAY FX, PITCH (Chorus, Flanger or Resonator) and EQ.

1. Press the FX button to enter the Effects section. The display will read:

REVERB(Plate2)P1
Outpt Level: 99

Turning the VALUE encoder will scroll you through the five FX Functions. For example, turn VALUE once clockwise and you will reach the next FX Block, which is the Overdrive Function:

QVERDRIVE ^{P1}

Level: 00

Turning VALUE further clockwise will move you to the DELAY Function, then to the PITCH Function and finally to the EQ Function. Turning the VALUE encoder counterclockwise will return you to the previous Effects Function.

2. To select the parameters within an Effect Function, press the CURSOR > button so that the cursor is beneath the parameter of the Effect Function:

```
REVERB(Plate2) P1
Outpt Level: 99
```

Now turn the VALUE encoder to scroll through the various parameters within the Effect Function. For example, turning VALUE once clockwise from the above state will display Page 2 of the REVERB Function:

```
REVERB(Plate2)P2
Type: PLATE 2
```

3. To adjust the parameter, press the CURSOR > again so that the cursor is now the beneath the parameter's value:

```
REVERB(Plate2) P2
Type: PLATE 2
```

Turning the VALUE encoder will adjust the Effect Function Parameter. For example, turning VALUE once clockwise will change the Reverb Type from PLATE 2 to ROOM:

```
REVERB (Room) P2
Type: ROOM
```

4. Pressing the CURSOR > once more will return the cursor cyclically to the Effect Function where you can select other Effects to adjust as described above.

For more detailed information on editing Drumkits, see "Chapter 4: Programming Drumkits".



This tutorial is meant as a brief overview of the DM Pro for the purposes of getting you and up and running as soon as possible. This section is not, under any circumstances, to be considered a complete exploration of the unit.

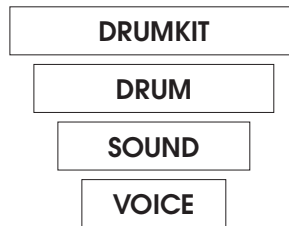
SYSTEM ARCHITECTURE

This chapter deals with the layout of the DM Pro interface and its associated conventions. By becoming familiar with the terms used in the DM Pro, you will better grasp the concepts and specifics of the machine, which will ultimately help you to maximize the unit's potential.

There's also a diagram at the end of the chapter which illustrates the path a signal takes inside the DM Pro from Trigger or MIDI Input to audio output.

ORGANIZATIONAL HIERARCHY

The DM Pro is organized into an inverted pyramid using four terms to describe the unit's building blocks:



DRUMKIT

The Drumkit is the highest level building block of the DM Pro. Think of a Drumkit as the building itself. You will typically use one Drumkit for each song. A Drumkit is a collection of 64 Drums, 16 Trigger Note Assignments, and all Effects settings. There are 64 Drumkits in the DM Pro, all of which may be edited and overwritten by the user. Drumkits can be edited and stored in Drumkit Mode.

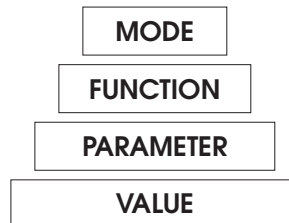
DRUM

The Drum is the workhorse block of the DM Pro. Think of a Drum as one floor of our multi-story building. A Drum is a complete sound, such as a Snare, Kick or Cymbal, that is assigned to a MIDI Note within a Drumkit. A DM Pro Drum is actually a composite instrument made of up to four unique Sounds, each of which can be edited in Drum Edit Mode. There are 1,664 Drums in the DM Pro, all of which are editable. 1,536 of the Drums are Preset and may not be overwritten, and the remaining 128 are "User Drums" which may be overwritten. Drums are selected (and the selections stored) in Drumkit Mode. Drums are edited in Drum Edit Mode.

SOUND	<p>Think of a Sound as one of the bricks that make up the building. A Sound is composed of a digital sample (or multisample) and its synthesizer Functions: Pitch, Filter and Amplitude, which can be changed, or modulated, by the Sound's three Envelopes, Function Routings and Modulation Matrix. Sounds can be edited and stored as "Drums" in Drum Edit Mode.</p> <p>Note that Sounds cannot be stored individually, except as "Single Sound" Drums. See the chapter "Programming Drums – Drum Edit Mode" for more information.</p>
VOICE	<p>The Voice is lowest level building block of the DM Pro. Think of a Voice as one of the ingredients that makes up a brick. The term "Voice" in this manual is used in two ways. It can mean:</p> <ol style="list-style-type: none">The individual sample around which the Sound is based, such as a Snare or Gong (this is by far the more common usage in this manual)The basic sample-playback generator used by the DM Pro. The DM-Pro has 64 dynamically-allocated Voices available at any one time for the Sounds within the Drums to use. For more information, see the Glossary of Terms (Appendix D).

PROGRAMMING HIERARCHY

For the programming of Drumkits, Drums and Triggers, the DM Pro programming interface is also organized into another (non-inverted) pyramid using four basic programming terms:



By understanding this terminology as it pertains to the DM Pro, you will glide quickly through the Reference Manual and get right to the more important task of making music with the module.

MODE	<p>Mode is the highest organizational programming level of the DM Pro. Mode refers to one of the three basic operating areas of the unit: Drumkit Mode, Drum Edit Mode and Trigger Mode. Each Mode contains several Functions; each Function, in turn, contains several Parameters. Each Mode has a dedicated button for immediate access: to enter Drumkit Mode, press [KIT]. To enter Drum Edit Mode, press [DRUM] and then [EDIT]. To enter Trigger Mode, press [TRIG].</p>
------	--

FUNCTION	Function is a subset of Mode. A Function is a part of the DM Pro software that contains a set of related Parameters within a given Mode. For example, within Drumkit Mode, the Mix Function contains the Parameters for the level of a Drum, its Pan setting, Output and Effects Buss Assignment and Effects Send Level. Within Drum Edit Mode, the Filter Function contains the Parameters that control the brightness of a Sound, such as Cutoff, FENV>Filter, Velocity>Filter, etc.
PARAMETER	Parameter is a subset of Function. A Parameter is a part of the DM Pro software that conducts a specific task within a given Function. For example, within the Mix Function, the Drum Volume Parameter controls the level of a Drum. Within Drum Edit Mode, the Filter Cutoff Parameter controls the baseline brightness of a Sound.
VALUE	Value is the amount, or setting of a Parameter. A Value can be a number or a word. In the example, "AENV Attack: 32", the number "32" is the Value. In the example, "FX Bus: REVERB", the word "REVERB" is the Value. Value is the lowest organization programming level of the DM Pro – you cannot zoom in any farther than this.

OTHER PROGRAMMING TERMS YOU SHOULD KNOW

PAGE	A Page is the area that is displayed on the LCD at one particular time. Most DM Pro Functions contains several Pages; each Page contains an individual Parameter of the Function. When a Function contains multiple Pages, the Page will be denoted in the display with a "P" followed by the Page number (P1, P2, etc.) at the far right of the display on either the upper or lower line, depending on the Function. To change Pages, move the cursor beneath the Parameter name and turn the Value encoder.
MIDI NOTE NUMBER	This refers to one of the 64 "locations" or "slots" where Drums reside within a DM Pro Drumkit. All of the MIX and TUNE Parameters refer to MIDI Note Numbers and not to the Drums that reside there. There are 64 MIDI Notes available to you in the DM Pro: A0 (MIDI Note # 33) through C6 (MIDI Note # 96). This range slightly exceeds a that of a 5-octave keyboard. Note that Alesis refers to middle C as "C3". As mentioned in the "Hands-On Tutorial", be aware that some other manufacturers such as Korg, Roland and Digidesign refer to middle C as "C4". However, manufacturers all agree on MIDI Note Numbers (e.g., middle C = 60).

THE THREE MODES OF THE DM PRO

The DM Pro operates in three basic Modes:

DRUMKIT MODE

This is where you will spend 99% of your time with the DM Pro. Drumkit Mode is where you select individual Drums, change their volumes, their panning, their tuning and their MIDI and output assignments. Drumkit Mode also contains all of the Effects Functions. The DM Pro has 64 Drumkits. To enter or return to Drumkit Mode at any time, press [KIT].

DRUM EDIT MODE

This is where you edit the parameters which make up an individual Drum. Each Drum is made up of four Sounds, and each Sound has its own unique parameters. Drum Edit Mode is for advanced operation only, and it is substantially more complex than any of the other modes. There are 128 User Drum locations where you can store your edited Drums. To enter or return to Drum Edit Mode, press [DRUM] and then [EDIT].

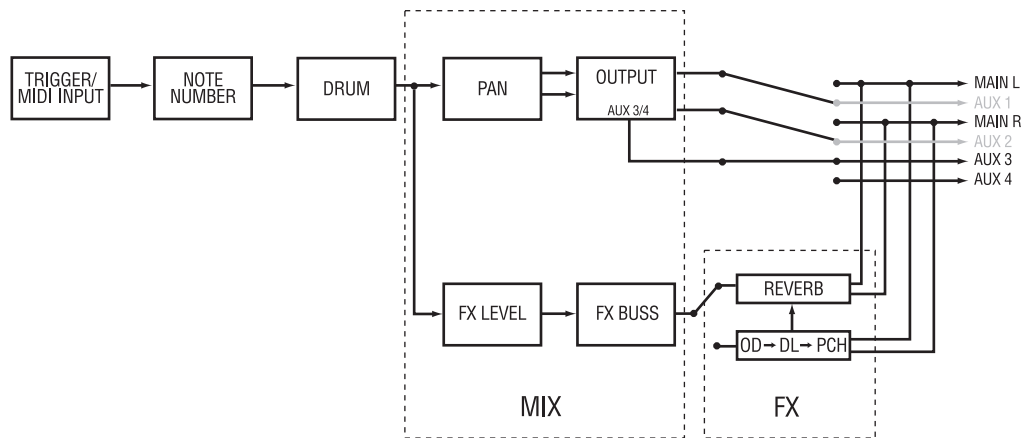
TRIGGER MODE

This is where you adjust the parameters for the trigger input section, including Trigger Note Assignment, Gain, Threshold, Crosstalk and Sequence Commands. Trigger Mode contains four Trigger Setups which are stored independently of Drumkits or Drums. To enter or return to Trigger Mode, press [TRIG].

THE DM PRO SIGNAL PATH

Here is a simple diagram which illustrates the path a signal takes inside the DM Pro from Trigger or MIDI Input to audio output:

DM Pro Signal Flowchart



Everything in the DM Pro is centered around the MIDI Note Number. Every Trigger Input has to be assigned a MIDI Note Number before it can be assigned a Drum. Each Drumkit is made up of 64 MIDI Note Numbers, to which you assign Drums. When you select a Drum in order to edit its component Sounds, you will select and edit it from the MIDI Note Number on which it resides within the Drumkit.

Once the MIDI Note Number has been assigned a Drum, then the Drum can be routed to one of the Effects Busses and then on to one of the six Outputs. (These are all items we will cover in the next few chapters.)

For a discussion of MIDI Note Numbers and other MIDI concepts, see “Appendix C: MIDI Supplement.”

PROGRAMMING DRUMKITS

Drumkit Mode is where you will spend 99% of your time with the DM Pro. It is the “top level” of the unit. Drumkit Mode is where you select individual Drums, change their volumes, their panning, their tuning and their MIDI and output assignments. Drumkit Mode also contains all of the Effects Functions as well as Trigger Note assignments. It is the general housekeeping area of the module – most tasks can be accomplished right here.

To enter or return to Drumkit Mode at any time, press the KIT button.

This section describes the programming and editing of a Drumkit.

There are 9 Functions in Drumkit Mode:

- Drum Assign**
- Tune**
- Mix**
- Note Chase**
- Trigger Note Assign**
- Trigger Sequence**
- MIDI**
- Drumkit Name**
- Effects**

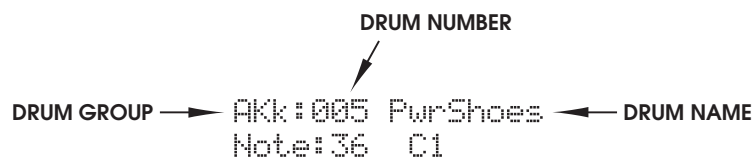
THE DRUM ASSIGN FUNCTION

This Function assigns any of the individual DM Pro Drums to specific MIDI Note Numbers. There are 64 available MIDI Note Numbers in the DM Pro which can be thought of as locations or slots where Drums reside.

To access the Drum Assign Function, press DRUM.

To assign a Drum to a specific MIDI Note, select that MIDI Note using the Note Chase Function or by moving the cursor to the MIDI Note and selecting it with the Value encoder. Remember that you can audition the Drum you’ve selected by using the [PREVIEW] button.

Next, select the type of Drum you want by moving the cursor beneath the Drum Group. The Drum Group is the three character abbreviation to the left of the Drum Name:



There are 13 Internal Drum Groups from which to choose. Some abbreviations are obvious and others are less obvious. Here is a listing of the 13 Internal Drum Groups:

AKk	Acoustic Kicks
EKk	Electronic Kicks
ASn	Acoustic Snares
ESn	Electronic Snares
Tom	Toms
Hat	Hi-hats
Cym	Cymbals
AP1	Acoustic Percussion 1
AP2	Acoustic Percussion 2
EPc	Electronic Percussion
SFx	Sound Effects
Chr	Chromatic (pitched percussion)
USR	User Bank

The final “User” Drum Group contains 128 Drums of varying types that may be overwritten in order to store your own original or edited Drums.

Once you have selected your desired Drum Group, move the cursor beneath the Drum Number. Using the Value encoder, scroll through the contents of the Drum Group to find the Drum of your choice. A Drum Group can contain up to 128 Drums, and many of the Preset Drums offer multiple subsequent variations on a specific timbre (i.e., wood snares, floppy kicks, china cymbals, etc.).

If you are not satisfied with the choices in the current Drum Group, move the cursor back beneath the Drum Group and try auditioning a different Drum Group. Sometimes, depending on the track, an acoustic drum can sound electronic, or vice-versa, an electronic drum can sound acoustic. Don’t let the Drum Group names limit your options. Always let your ear be the final judge.

A NOTE ABOUT USING THE PREVIEW BUTTON

The [PREVIEW] button is a very handy tool for hearing the edit you’ve made without having to turn away from the front panel of the DM Pro. It will play the currently selected Drum at a MIDI velocity of 127 (maximum). Since this is the case, keep in mind that you will not hear any components of the Drum which were programmed using a velocity curve of 1 of 2, 1 of 3, 1 of 4, 2 of 3, 2 of 4, 3 of 4, INVERTED or MINIMUM. Each of these velocity curves is set up to be completely silent (or nearly so) when a velocity value of 127 is received.

For more information on the aforementioned velocity curves, see “Chapter 6: Programming Drums.”

THE TUNE FUNCTION

This Function allows you to change the pitch of an individual Drum within a Drumkit.

To access the Tune Function, press TUNE. Then select the MIDI Note of the Drum that you wish to tune.

Now move the cursor beneath the Tune Value and turn the Value encoder to adjust the pitch of the Drum to taste.

Drums can be tuned in 25 cent steps, which is one quarter of a musical half step (the smallest interval on a piano or guitar) or one eighth of a musical whole step. The maximum tuning range in Drumkit Mode is two octaves away from the root pitch, either up or down.

Tip: To reach tuning ranges beyond the reach of Drumkit Mode, adjust the Semitone Parameter contained in the Pitch Function of Drum Edit Mode.

THE MIX FUNCTION

This Function allows you to change the output characteristics of a Drum within a Drumkit. These output characteristics include whether a Drum is Enabled, its Volume, Pan Position, Output Assignment, Effects Buss Assignment and Send Level. The Mix Function also enables you to set Drums to mute or trigger other Drums using the Mute Group and Drum Link Parameters.

P1: The DRUM VOLUME Parameter

As you can probably guess, this parameter adjusts the output level of a Drum assigned to a MIDI Note. To set Drum Volume, move the cursor beneath the Drum Volume Parameter Value:

Drum Volume: 99

Note:83 B4 ^{P1}

P2: The DRUM PAN Parameter

This parameter allows you to position an individual Drum in the stereo field. To adjust the pan position of a Drum assigned to a MIDI Note, move the cursor beneath the Drum Pan Parameter Value:

Drum Pan: PROG

Note:83 B4 ^{P2}

Now turn the Value encoder to change the MIDI Note's pan position. There are eight possible Values for the Drum Pan Parameter:

<3	Panned hard left
<2	Panned moderately left
<1	Panned slightly left
<>	Panned center
1>	Panned slightly right

- 2> Panned moderately right
- 3> Panned hard right
- PROG Pan position determined by the Drum

In the final position, PROG, the Drum as programmed in Drum Edit Mode determines the Pan position. Since a Drum is composed of four unique Voices, each Voice can be panned independently. Different Voice Pan settings within a Drum are used to create stereo Drums.

However, if the Pan Parameter of a stereo Drum is set to any Value other than PROG, the Drum will be summed to mono with all Voices panned to the same position.

Tip: To retain the image of a stereo Drum, make sure the Pan Parameter Value is set to PROG.

Note that Drum Pan Parameter becomes irrelevant if the Output Assignment is set to Aux 3 or Aux 4 since these are monaural outputs.

P3: The OUTPUT ASSIGNMENT Parameter

This Parameter determines to which of the six outputs a Drum assigned to a MIDI Note will be sent. The six outputs are configured as two stereo pairs (Main L/R and Aux 1/2) and two monaural outputs (Aux 3 and Aux 4).

It is important to note that the Effects are sent only to the Main Outputs. Any Drum on a MIDI Note assigned to Aux 1/2, Aux 3 or Aux 4 will be dry out of those outputs. But the “effected signal” of Drums assigned to Aux 1/2 will still go to the Main Outputs as long as their Effects Send Level (see the following description of this Parameter) is greater than 0. Drums assigned to Aux 3 or Aux 4 are not sent through the Effects Busses. You will see the symbol “N/A” on the FX Level and FX Bus Pages when a Drum is assigned to Aux 3 or Aux 4.



Note that many DM Pro Drums contain sampled reverb or ambience, which will remain intact even if the Drum’s MIDI Note is routed to an Auxiliary Output. This sampled reverb is independent of the Effects Processor and can only be edited from within Drum Edit Mode as it is part of the Drum itself.

Many of the DM Pro Preset Drums are stereo Drums. Again, to preserve their stereo image, do not adjust their Pan Parameter Value. To route stereo Drums to an Auxiliary Output, choose the AUX 1/2 Parameter Value. This setting will preserve the Drum’s stereo image while still removing it from the Main Outputs. Then you can process the Auxiliary 1/2 Outputs as a separate stereo pair from the Main Outputs.

To assign a Drum to a specific output or output pair, move the cursor beneath the Output Assignment Parameter Value:

Output: MAIN L/R
Note: 83 B4 ^{P3}

Move the Value encoder to change the Output Assignment.

There are five possible Values for the Output Assignment Parameter: Main L/R (stereo), Aux L/R (stereo), Aux 3 (mono), Aux 4 (mono) and FX Only. The FX Only setting removes the dry signal of a Drum from all outputs, but the Drum still sends to the assigned Effects Buss. The result is an “effect only” Drum that can be used as a musical effect or as a layer with another Drum using the Drum Link Parameter, which is described below.

If a stereo Drum is assigned to Aux 3 or Aux 4, it will be automatically summed to mono. This summation can be desirable in some applications, but if you want to preserve the image of a stereo Drum, then only assign it to Main L/R or Aux 1/2.

Tip: To get six discrete monaural outputs, assign Drums to the Main Outputs and to the Aux 1/2 Outputs, and then pan the Drums hard left and hard right using the Drum Pan Parameter as described above. The only thing that will spoil the total isolation of the six outputs is the Effects Processor, which always outputs to Main L/R. To achieve completely discrete outputs (total isolation), set the Effects Send Level Parameter Value for each Drum to 00.

P4: The EFFECTS SEND LEVEL Parameter

This Parameter allows you to set the amount of Drum signal that is sent to the Effects processor for each MIDI Note of the DM Pro. Higher Values will make the Drum sound more wet, and lower Values will make the Drum sound less wet. A Value of 00 will leave the Drum completely dry (no effects).

To set the Effects Send Level, move the cursor beneath the Parameter Value and adjust the send amount to taste with the Value encoder:

FX Level: 70

Note:83 B4 ^{P4}

Note that all Effects Levels are “post fader”, meaning that their Effects Level is a multiplier of the Drum Volume Parameter and inherently tied to that Parameter. For example, if the Drum Volume Parameter Value is 00, then no signal will be sent to the Effects processor, even if the Effects Level Parameter Value is set to 99.

The idea behind “post fader” signal routing is to preserve the balance between the effect and the dry signal. As the dry signal is raised, the effect send is raised proportionately. This way the whole sound, effect and all, will stay balanced even as its volume changes.

Tip: Try setting the Output Assignment Parameter Value to FX ONLY, and set the Drum Volume Value to 99. This will create an “effects only” Drum that can be used for dramatic musical effect, or as a powerful timbral layer with another Drum using the Drum Link Parameter (described below). With the Output Assignment set to FX ONLY and the Drum Volume set to maximum, the Effect Send Level Value essentially becomes the Drum Volume Parameter.

P5: The EFFECTS BUSS Parameter

This Parameter allows you to choose which of the two Effects Busses (or “effect sends”) to send the Drum assigned to each MIDI Note. There are two Effects Busses: the Reverb Buss and the Multi-Effects Buss.

The Reverb Buss routes the signal only to the Reverb effect, while the Multi-Effects Buss sends the signal through a chain of effects which include Overdrive, Delay and a Pitch effect that can be configured as either a Chorus, Flanger or Resonator. The Multi-Effects can, in turn, be sent to the Reverb effect as well, but the routings must be made from within the FX Function itself and not from within the Mix Function.

Note that the Multi-Effects Buss is displayed in the LCD as OD>DL>PCH which denotes the Multi-Effects’ signal flow.

To toggle between Effects Busses, move the cursor beneath the Effects Buss Name:

FX Bus:REVERB

Note:83 B4 P5

Turn the Value encoder to select the Multi-Effects Buss:

FX Bus:OD>DL>PCH

Note:83 B4 P5

You may of course turn the Value encoder back again to select the Reverb Buss.



To edit the actual Effects Parameters (Overdrive Brightness, Flanger Depth, Reverb Output Level, etc.), see the passage on the Effects Functions later in this section.

P6: The MUTE GROUP Parameter

This Parameter allows you to mute another Drum when the selected Drum is played. It is useful to close ringing open hi-hats, to choke cymbals, or even to end a snare drum roll. In order for the Mute Group Parameter to work, Drums that you intend to mute each other must be assigned to the same Mute Group. This makes all notes in the Drum Group “monophonic”, where only one note can sound at a time.

There are four Mute Groups from which to choose. A typical application would be assign the Open, Foot Down and Foot Up Hi-hats to one Mute Group, an Open and Muted Triangle to a second Mute Group, and a Long and Short Guiro to a third Mute Group. In this example, the Hi-hats will mute each other, but none of the Hi-hats will mute the Triangles or the Guiros because the Triangles and the Guiros are assigned to different Mute Groups. Similarly, the Triangles will mute each other, but neither of the Triangles will mute the Hi-hats or Guiros.

Another useful Mute Group trick is to assign a “Silent” Drum within the Drumkit to the same Mute Group as some other Drum, like a Cymbal or Sound Effect. There is a dedicated Drum in the DM Pro which can be used for this purpose. It is “SFX:127 Silence.” But you could use any Drum in the Drumkit to do this, as long as its Drum Volume parameter is set to 00 and it matches the Mute Group assignment of

whatever Drum you are trying to mute.

P7: The DRUM LINK Parameter

This Parameter allows you to trigger another Drum when the selected Drum is played. It is a method for layering Drums without having to enter Drum Edit Mode. When the Drum Link Parameter is active for a given Drum, two Drums will respond to one incoming MIDI Note or Trigger. You can layer any Drum with any other Drum in the current Drumkit (except itself). And every single Drum inside a Kit can be layered with some other Drum in that Kit.

To Link one Drum to another, move the cursor under the word OFF:

```
Drum Link:OFF
Note:83 B4 P1
```

As soon as you select the first possible value, the display will look like this:

```
Drum Link:33 A0
Note:83 B4L P1
```

The “L” on the lower line indicates that the Drum on MIDI Note Number 83 has been Linked. The 33 A0 part of the display tells you which MIDI Note Number is Linked to the currently selected Drum. But this is the only page inside the Mix Function where the DM Pro shows the MIDI Note Number to which the current Drum is Linked. However, when you press [DRUM], [TUNE], or [TRIG] and you call up the Drum on MIDI Note Number 83, the Linked Drum’s MIDI Note Number will be displayed. This is how it will look from the Drum Select screen:

```
AP2:000 SleighBI
Note:83 B4L33
```

P8: The DRUM ENABLE Parameter

To Enable a Drum to sound, set the Enable Value to ON. If the Enable Parameter is not set to ON, the Drum will not sound and the MIDI Note that the Drum occupies will be silent. If you want to deliberately disable a Drum from sounding, set the Enable Value to OFF.

THE NOTE CHASE FUNCTION

The Note Chase Function is a quick way to select a specific MIDI Note in the DM Pro. Unlike other DM Pro Functions, there are no Parameters associated with Note Chase. The Function is simply either on or off.

When Note Chase is on, the note played from your controller, either MIDI or Trigger, will change the currently selected MIDI Note to the note you played.

To turn on the Note Chase Function, simply press CHASE and the button will light. To turn off the Note Chase Function, press CHASE again so that the button’s light goes off.

Tip: Turn the Note Chase Function off when the DM Pro is being played by a sequencer. If Note Chase is on, the selected MIDI Note will jump erratically as it tries to follow the last note sent. If the DM Pro is displaying any Drumkit editing Function, the LCD will constantly update the current Parameter Value

to reflect the currently selected MIDI Note causing a flood of information to appear on the screen. While this will not harm the DM Pro in any way nor impede its operation, it can be distracting and annoying.

THE TRIGGER NOTE ASSIGN FUNCTION

This Function assigns each of the 16 Triggers to their own MIDI Note Number. Conceptually, the Trigger Note Assign Function is like creating a MIDI keyboard with 16 notes. However, since the Trigger Note Assign Function is stored with each of DM Pro's 64 Drumkits, you can have 64 different "keyboards" (sets of Trigger Note Assignments) from which to sound Drums.

Generally, drum pads are connected to the DM Pro's Trigger Inputs. Using the Trigger Note Assign Function, you can link each pad to a different MIDI Note in each Drumkit, or keep the same Trigger Note Assignments from Drumkit to Drumkit and instead change the Drums that occupy each MIDI Note. The system is completely flexible.

To assign a Trigger to a MIDI Note, first press the [TRIG] button and then select the Trigger you wish to assign by pressing < TRIGGER >. These two buttons will scroll you through the 16 Triggers, all of which are perpetually visible at the bottom of the display. The currently selected Trigger will flash.

When you select your desired Trigger, the display will automatically jump to the Trigger Parameter that you last selected. Move the cursor beneath the current Parameter, and then turn the Value encoder to select the Note Assign Parameter. Next, move the cursor beneath the MIDI Note Number and then turn the Value encoder to assign the currently selected Trigger to the MIDI Note of your choice:

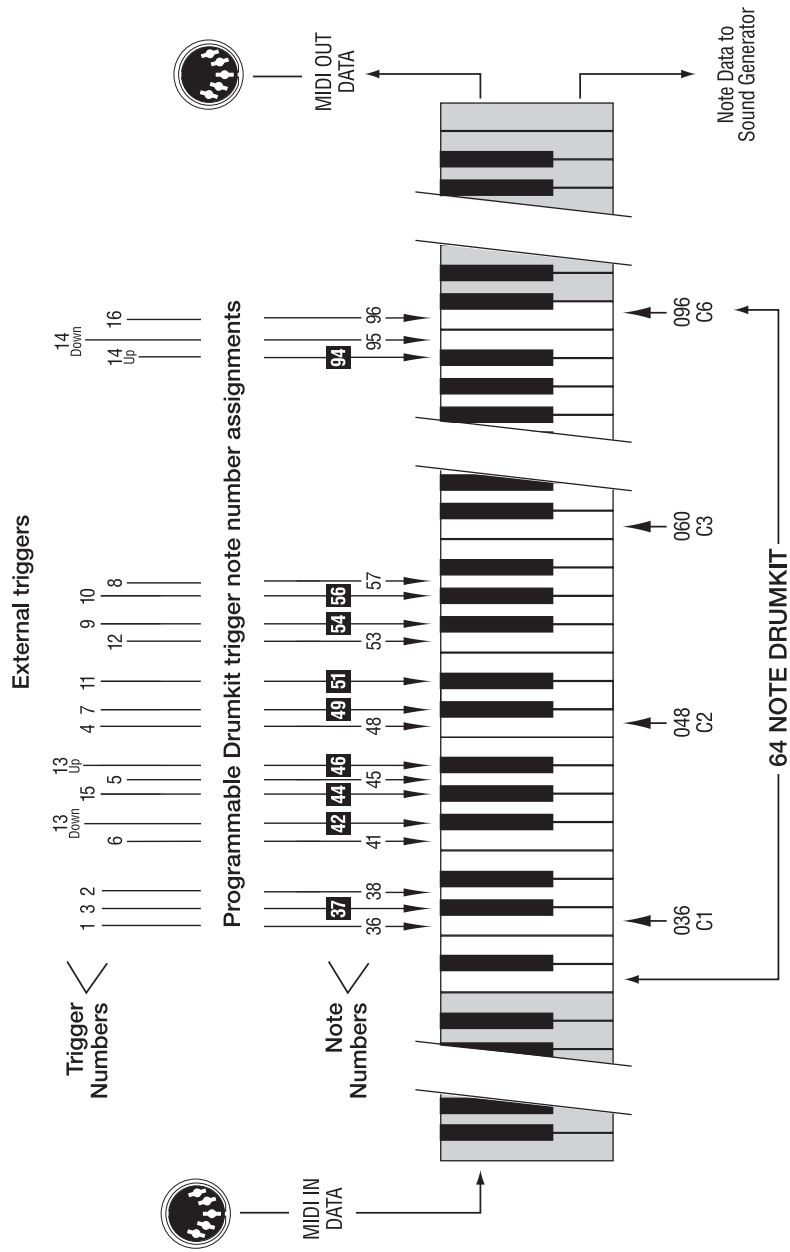
Note: 72 C4
Drumkit P1

Tip: Notice that the DM Pro allows you to assign the same MIDI Note to multiple triggers. This allows you to play, for example, the same snare drum from two different pads.

Remember that Trigger Note Assign is a Drumkit Mode Function and not a Trigger Mode Function. The Trigger Note Assign Values are stored within a Drumkit and not within a Trigger Setup.

On the next page is a diagram which illustrates the default MIDI Note Number assignments of each Trigger in the DM Pro.

DM PRO TRIGGER/NOTE RELATIONSHIP



THE TRIGGER SEQUENCE FUNCTION

This Function allows you to send sequence commands from individual Trigger Inputs. You can send Start, Stop or Continue Sequence playback commands to an external sequencer, and you can also Start or Stop Sequence playback from a PCMCIA card that is plugged into the DM Pro. You can make your own custom sequence cards with the Alesis Sound Bridge computer application that is included on the DM Pro CD ROM.

The Trigger Sequence Function has two Parameters: the Sequence Command Parameter and Sequence Select Parameter. Both of these Parameters are found in the Trigger Mode pages even though they are actually Drumkit Mode Parameters. They are located within Trigger Mode because they are associated with Triggers, but remember that these two Parameters that compose the Trigger Sequence Function are stored with a Drumkit and not with a Trigger Setup.

P9 The Sequence COMMAND Parameter

To set a Trigger to send a Sequence Command, first press [TRIG] and then select the Trigger from which you wish to send the Command by pressing < TRIGGER >. These two buttons will scroll you through the 16 Triggers, all of which are perpetually visible at the bottom of the display. The currently selected Trigger will flash.

Now underline the parameter section of the display. Turn the Value encoder until you reach Page 9 of Trigger Mode:

Seq: Off
Drumkit P9



This parameter will show up on Page 10 for Triggers 13 and 14, while it shows up on Page 8 for Trigger 16. This is due to the differing number of parameters available for these Triggers.

This is the Sequence Command Parameter page. Move the cursor beneath the Value, which defaults to Off. Using the Value encoder, select the Command that you wish the currently selected Trigger to send. Your choices are:

- | | |
|---------------|--|
| Off | This Value will prevent the currently selected Trigger from sending any MIDI Sequence Commands. |
| MIDI Start | This Value will cause the currently selected Trigger to send a MIDI Start Command to an external sequencer, which will initiate playback of the external sequencer. If you select this Value (or any "MIDI" Value), make sure that you have the MIDI OUT of the DM Pro plugged into the MIDI In of the external sequencer, and that your external sequencer is set to respond to MIDI Sequence Commands. |
| MIDI Continue | This Value will cause the currently selected Trigger to send a MIDI Continue Command to an external sequencer, which will cause the sequencer to resume playback after being stopped from the point in the |

	sequence where it was stopped. To begin playback from the beginning of the sequence, use the MIDI Start Command.
MIDI Stop	This Value will cause the currently selected Trigger to send a MIDI Stop Command to an external sequencer, which will cause the sequencer to stop playback. Use the MIDI Continue Command to resume playback from the point where you stopped the sequence, or use the MIDI Start Command to begin playback from the beginning of the sequence.
MIDI Start/Stop	This Value allows one Trigger to send both MIDI Start and Stop Commands to an external MIDI sequencer. The first hit will send a MIDI Start Command, initiating playback, and the second hit will send a MIDI Stop Command, halting playback. A third hit will again initiate playback from the beginning of the sequence. To resume playback from the point in the song where you stopped, assign another Trigger to send the MIDI Continue Command.
Card Start	This Value will initiate sequence playback from a PCMCIA card that is plugged into the DM Pro. Note that all of the "Card" Values do not send messages via MIDI – they are for local use only. Use the included Sound Bridge computer application to create custom sequence cards.
Card Stop	This Value will halt sequence playback from a PCMCIA card that is plugged into the DM Pro.
Card Start/Stop	This Value allows one Trigger to send both Card Start and Card Stop Commands. The first hit will initiate card playback, and the second hit will halt card playback. A third hit will again initiate playback from the beginning of the sequence.

P10 The Sequence NUMBER SELECT Parameter

This Parameter allows you to select which sequence (either external or card) will be controlled by the Sequence Command Parameter (see above). You can assign different Triggers to control various sequences. Using the MIDI Start / Stop or Card Start / Stop, you can control up to 16 sequences from the Trigger Inputs. You may also mix and match card sequences with MIDI sequences, thereby integrating an external sequencer with the internal PCMCIA slot sequencing capabilities of the DM Pro.

To select which sequence you wish to control from a Trigger, first press [TRIG] then select the Trigger from which you wish to send the sequence Command by pressing < TRIGGER >. The currently selected Trigger will flash.

Now underline the parameter section of the display. Turn the Value encoder until you reach Page 10 of Trigger Mode:

Sequence Num: 00

Drumkit

P10



This parameter will show up on Page 11 for Triggers 13 and 14, while it shows up on Page 9 for Trigger 16. This is due to the differing number of parameters available for these Triggers.

This is the Sequence Select page. Move the cursor beneath the Value, and then turn the Value encoder to select the sequence number that you wish to control from the current Trigger. You may set each Trigger to control a different Sequence Number, which gives you the possibility of controlling up to 16 sequences via the Trigger Inputs.

Note that with both the Sequence Command and Sequence Select Functions, the bottom line of the display reads “Drumkit”. This is to remind you that the Trigger Sequence Function, like the Trigger Note Assign Function, is stored with Drumkits and not with Trigger Setups.

THE MIDI FUNCTION

There are two types of MIDI Functions: the Drumkit MIDI Function and the Global MIDI Function. This passage will explain the Drumkit MIDI Function. For information on the Global MIDI Function, see “Chapter 8: Global Functions”.

The Drumkit MIDI Function contains three Parameters that are displayed beginning on Page 14 of the MIDI Function (Pages 1 - 13 of the display refer to the Global MIDI Function). These three Drumkit MIDI Functions contain unique Values for each Drumkit that are stored with that Drumkit. The three Drumkit MIDI Functions are Drum Channel Override, MIDI In Enable and MIDI Out Enable.

P14 The DRUM CHANNEL OVERRIDE Parameter

This Parameter allows the DM Pro to respond to or transmit on up to sixteen MIDI Channels simultaneously. The Parameter is called “Drum Channel Override” because it has the ability to override the setting for the MIDI Basic Channel (which is a Global MIDI Parameter) for each Drum assigned to a MIDI Note. For example, if the MIDI Basic Channel is set to 10, you can assign only the toms to MIDI Channel 11, which will allow the toms to receive controller commands such as Pitch Bend, MIDI Volume or MIDI Panning without affecting the rest of the Drumkit. Similarly, you could assign the snare to MIDI Channel 1, the cymbals to MIDI Channel 4, and then have independent, specific MIDI control over these instruments because they are assigned to unique MIDI Channels.

The default value for the Drum Channel Override is BASIC, which means that the Drum assigned to that MIDI Note will respond to the MIDI Basic Channel (set in the Global MIDI Function):

Drum Chan: BASIC

Note:72 C4 ^{P14}

To set a Drum to respond to a Channel other than the MIDI Basic Channel, move the cursor beneath the word BASIC and turn the Value encoder to select your desired Drum Channel Override:

Drum Chan: 01

Note:72 C4 ^{P14}

To make the Drum conform to the same Channel as the rest of the Drums in the Drumkit, turn the Value encoder back so that the display shows a Drum Channel Override Value of BASIC again.

Tip: In a computer sequencing environment, put the DM Pro on its own MIDI port for maximum flexibility and minimum response time. This way, using MIDI controller commands, you can have independent and flexible control over groups of Drums which you can assign to several different MIDI Channels. Since the DM Pro is on its own MIDI port, you won't have to worry about accidentally triggering other MIDI devices that may be set to the same Channel as one or more of your MIDI Drum groups.

P15 The MIDI INPUT ENABLE Parameter

This Parameter enables or disables MIDI Input for each Drum in a Drumkit. This allows you to selectively sound notes within a Drumkit from either a Trigger or MIDI (or both). This Parameter is useful for triggering Drums from pads while a sequencer is simultaneously playing other notes via MIDI. Or, you may have a mixed controller setup where you play some notes from trigger pads, and others from a MIDI pad controller.

To enable MIDI Input for a Drum, move the cursor under the Parameter Value and turn the Value encoder to set it to ON. Likewise, to disable MIDI Input for a Drum, move the cursor under the Parameter Value and turn the Value encoder to OFF:

MIDI Input: ON

Note:60 C3 ^{P15}

P16 The MIDI OUTPUT ENABLE Parameter

Like MIDI Input Enable, this Parameter enables or disables MIDI Output for each Drum in a Drumkit. This allows you to selectively transmit MIDI notes out of the DM Pro's MIDI Out from a Trigger. This Parameter allows the DM Pro to act as a Trigger - to - MIDI interface, converting incoming Trigger signals into outgoing MIDI data.

But in many applications, you may not want to transmit MIDI from all of your Triggers. In this case, disable the MIDI Out for any Drums that have Triggers assigned from which you do not want to transmit MIDI.

To enable MIDI Output for a Drum, move the cursor under the Parameter Value and turn the Value encoder to set it to ON. Likewise, to disable MIDI Output for a Drum, move the cursor under the Parameter Value and turn the Value encoder to set it to OFF:

MIDI Output: ON

Note:60 C3 ^{P16}

THE DRUMKIT NAME FUNCTION

As you probably guessed, this Function allows you to name your Drumkits. To access the Drumkit Name Function, go the top level of Drumkit Mode by pressing KIT. The current name of the Drumkit will be displayed on the top line with nothing on the bottom line:

“RealProKit”

Now press EDIT, which will take you to the Drumkit Name Function. Notice that the Drumkit Name remains on the top line of the display, but now the Function is displayed on the bottom line:

“RealProKit”
Drumkit Name

Turn the Value encoder to change each character. Using the CURSOR buttons, move the cursor beneath each character you wish to edit, and then again turn the Value encoder to find the character you wish. Drumkit Names contain up to ten characters which may be in upper or lower case.

Here is a chart of available Drumkit Name characters:

		“	#	\$	%	&	‘	()	*	+	.	-	.	/	0	1	2	3
4	5	6	7	8	9	:	:	<	=	>	?	@	A	B	C	D	E	F	G
H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	[
¥	1	^		`	a	b	c	d	e	f	g	h	i	j	k	l	m	n	o
p	q	r	s	t	u	v	w	x	y	z	{		}						

Remember that the Drumkit Name Function is an edit function like any other. Be sure to save your edited Name with the Drumkit like you would any other Drumkit edit with the Store command.

THE EFFECTS FUNCTION

The Effects Function, although still a part of Drumkit Mode, contains so much power and so many Parameters that we have included a complete section dedicated to the Effects alone. See the next section entitled “Chapter 5: Programming Effects”.

PROGRAMMING EFFECTS

The DM Pro contains a powerful two buss multi-effects processor that is capable of simultaneously delivering up to five studio-quality digital effects. This section describes how to program and edit this powerful effects processor.



Remember that the Effects are only sent to the Main Outputs of the DM Pro. You cannot route them to any of the Auxiliary Outputs.

The Effects Function is the one Function in the DM Pro that contains multiple Functions of its own. This slight break in the programming hierarchy convention was made to accommodate the enormous power of the DM Pro's Effects Processor.

Note that all Effect Functions are stored with a Drumkit – even though there a dedicated FX button, remember that all of the Effects Functions are a subset of Drumkit Mode and can contain unique Values for each Drumkit.

There are five Effects Functions, each of which represents a specific Effect type:

REVERB	An ambient space effect to simulate a room or hall
OVERDRIVE	Distortion. Designed to simulate effects from subtle preamp clipping to extreme guitar amp distortion
DELAY FX	Echo. The Feedback Parameter allows for multiple repeats.
PITCH	This Effect may be configured to act as a Chorus (ensemble sound), Flanger (sweeping sound) or Resonator (metallic sound) using very short delays that move at a very slow rate.
EQUALIZER	Traditional effect for increasing treble and bass. The Equalizer is Global and affects the whole Drumkit. It requires no effects send.

Each Effects Function (except the Equalizer) has its own Output Level which is used to set the total Volume for that Effect. The Output Level Parameter is located on the first page of each Effects Function. To bypass any of the Effects Functions, set their Output Level to 00.

Programming Effects

To reach the Effects Functions, press FX, and then with the cursor beneath the Effects Function name (REVERB, OVERDRIVE, etc.), move the Value encoder to scroll through the various Effects Functions:

REVERB(Plate2)^{P1}

Outpt Level: 99

To reach different Parameters within each Effects Function, move the cursor beneath the Parameter name and then turn the Value encoder to scroll through the various Parameters for the currently selected Effects Function:

REVERB(Plate2)^{P2}

Type: Plate 2

Note that the display Page Number will appear at the upper right of the LCD indicating the Parameter Page that you are currently on. The Page Number does not indicate the Function Page. This is because the Effects Function deviates from the normal DM Pro programming hierarchy in that it is the only DM Pro Function that contains more Functions (instead of just containing Parameters for the one main Function).

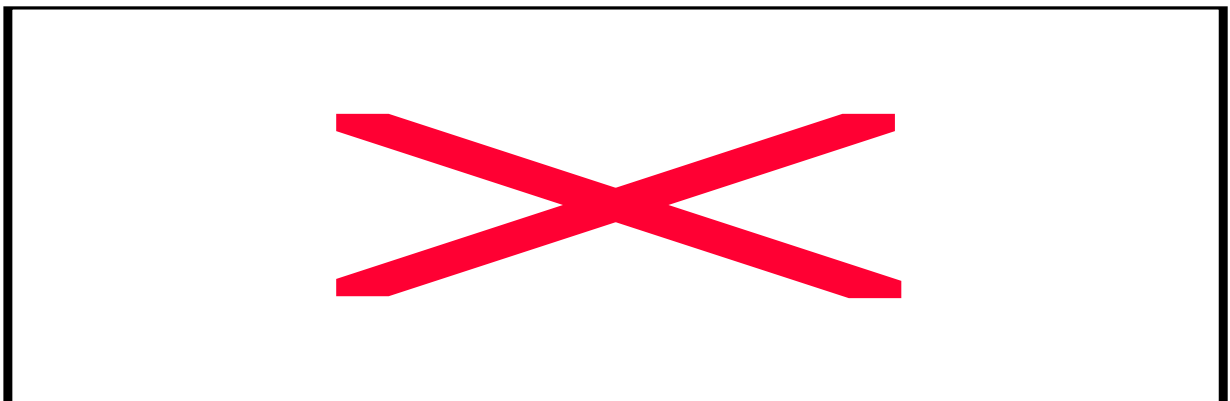
To adjust the Parameter Value for each Parameter, as in the rest of the DM Pro, move the cursor beneath the Value and turn the Value encoder to make your selection:

REVERB(Plate2)^{P2}

Type: Plate 2

Note again that a Value can be either a word or a number.

Below is a diagram which indicates the signal flow within the Effects configuration used by the DM Pro. Use it as a visual aid in understanding the various Effects Functions as they are discussed.



THE REVERB EFFECTS FUNCTION

The Reverb Effects Function contains 9 Parameters:

P1 The Reverb OUTPUT LEVEL Parameter

This Parameter sets the output Volume of the Reverb Effect. Simple enough!

P2 The Reverb TYPE Parameter

This Parameter allows you to select which Reverb Type (or “algorithm”) that you wish to use for your Drumkit.

About the Reverb Types:

The Hall and Large settings are good for long reverb decay times to simulate a large environment, and the Room setting is good for short reverb decay times to simulate a smaller environment. The Plate settings are very flexible algorithms designed to emulate the Plate Reverbs of the 1970’s –they work well for long and short decay times.

The Gated setting simulates non-linear reverb where the tail cuts off abruptly before it can decay naturally. Think of 1980’s Phil Collins or Miami Vice for this sound. The Reverse setting plays back a reverberant version of the source sound, you guessed it, in reverse. This simulates the technique of flipping over the tape reels and recording reverb in an analog environment. Of course, in the digital world, you generally only have to select the reverse command in your hard disk recorder to achieve the same results. Life was harder in the old days.

Note that on all Parameter pages inside the Reverb Effects Function that the Reverb Type is displayed on the top line next the Function Name (REVERB):

REVERB(Plate2)^{P1}

Outpt Level:99

It is important to note, however, that the Reverb Type can only be adjusted on Page 2, which is the actual Reverb Type Parameter.

P3 The Reverb PREDELAY Parameter (10 msec increments)

P4 The Reverb PREDELAY Parameter (1 msec increments)

To simulate an acoustic environment, long reverbs generally have what is called a “predelay”, which is an actual delay that separates the source sound from the reverb effect. Unless you are in an utterly massive space, this predelay time is generally less than 40 milliseconds.

The Reverb Predelay Parameter allows you to set the delay time that occurs before you hear the actual reverb effect.

Tip: To convincingly emulate plate reverbs, set the Reverb Predelay Value to 00.
Plate reverbs have no predelay.



Page 3 adjusts the Reverb Predelay parameter in 10 millisecond increments. To adjust the Reverb Predelay in increments of 1 millisecond, use the CURSOR > button to move the cursor from the first two numbers of the value to the last digit. This is Page 4 of the REVERB function.

P5 The Reverb PREDELAY MIX Parameter

This Parameter allows you to mix in the amount of Reverb that is immediately heard with the set amount of Predelay, essentially lessening the predelay effect while still keeping it as a part of the sound. Essentially you are sending two signals to the Reverb: a dry signal (no predelay) and a delayed signal. The Reverb Predelay Mix Parameter mixes between those two signals.

The display shows the two signals, dry (called IN) and predelay (called DEL), with a number between them. If the Value is set to anything other than 00, an arrow will point to which signal is being favored:

```
REVERB(Large)P5
PreMx:IN25>DEL
```

In the above example, the Predelay Mix is set to favor the predelayed (DEL) signal over the dry (IN) by 25%.

For a perfect balance between the predelayed and dry signals, set the Predelay Mix Value to 00. For the maximum predelay effect, set the Predelay Mix Value to IN99>DEL. For no predelay effect at all, set the Predelay Mix Value to IN<99DEL.

P6 The Reverb INPUT FILTER Parameter

High frequencies decay very rapidly in acoustic environments. When programming convincingly realistic reverbs, it is often desirable to limit the amount of high frequency that is processed by the effect. To that end, the DM Pro includes a low pass filter at the input to the Reverb Effect, which reduces the amount of high frequencies that are processed by the effect.

To set the Reverb Input Filter Value, move the cursor beneath the Value and then turn the Value encoder to set the amount of filtering you desire:

```
REVERB(Large)P6
Inpt Filter:52
```

Lower Values allow less high frequencies to pass into the Reverb Effect (more filtering), and higher Values allow more high frequencies to pass into the Reverb Effect (less filtering).

Tip: As you filter out more high frequencies with the Input Filter, the perceived Reverb Volume will be softer. If you set the Reverb Input Filter Value relatively low, try turning the Reverb Volume up to compensate for the psychoacoustic level difference.

P7 The Reverb DECAY Parameter

This Parameter sets the length of the Reverb Effect, which is often associated with the size of the environment that you are simulating. Higher Values simulate a larger environment, and lower Values simulate a smaller environment.

To set the Reverb Decay Value, move the cursor beneath the Value and then turn the Value encoder to set the length of the Reverb Effect:

```
REVERB(Large)P7
```

Decay:Z0

P8 The Reverb LOW DECAY Parameter

This Parameter subtracts low frequencies from the Reverb Decay (Page 6) so that they fade out more quickly than the higher frequencies. This Parameter can make the Reverb Effect sound brighter if set to a Value higher than the High Decay Parameter.

Higher Values will cause the low frequencies to fade faster. Lower Values will cause the low frequencies to fade more slowly and affect the overall Reverb Decay less.

To adjust the Reverb Low Decay Value, move the cursor beneath the Value and then turn the Value encoder to set the desired amount:

REVERB(Large)^{P8}

Low Decay: -20

P9 The Reverb HIGH DECAY Parameter

This Parameter subtracts high frequencies from the Reverb Decay (Page 6) so that they fade out more quickly than the lower frequencies. This Parameter can make the Reverb Effect sound darker if set to a Value higher than the Low Decay Parameter.

Higher Values will cause the high frequencies to fade faster. Lower Values will cause the high frequencies to fade more slowly and affect the overall Reverb Decay less.

To adjust the Reverb High Decay Value, move the cursor beneath the Value and then turn the Value encoder to set the desired amount:

REVERB(Large)^{P9}

High Decay: -40

<p>Tip: Generally high frequencies fade faster than low frequencies. To make your Reverb Effect sound as authentic as possible, set your High Decay to a higher value than the Low Decay, generally by as much as a factor of 2.</p>
--

P10 The Reverb DENSITY Parameter

This Parameter affects the actual timbre of the Reverb Effect. Higher Values will increase the number of short echoes that compose the Reverb Effect, while lower Values will decrease those echoes. The result is perceived as “thicker” reverb. High densities are usually desirable on drum sounds, whereas lower densities are usually desirable on vocal and guitar sounds. Generally, the lower the density, the more transparent the Reverb Effect becomes.

To set the Reverb Density Value, move the cursor beneath the Value and then turn the Value encoder to adjust the density of the Reverb Effect:

REVERB(Plate1)^{P10}

Density: 80

THE OVERDRIVE EFFECTS FUNCTION

The Overdrive Effects Function contains only two Parameters:

P1 Overdrive AMOUNT

This Parameter sets the output amount of the Overdrive Effect. Unlike a preamp or guitar amp, the DM Pro gives you the ability to mix the overdriven signal with the dry (unaffected) signal. To make a Drum completely overdriven (no dry signal), set the Drum Output to FX ONLY, which will remove the dry signal from the outputs.

To set the Overdrive Amount Value, move the cursor beneath the Value and then turn the Value encoder to adjust the output of the Overdrive Effect:

OVERDRIVE ^{P1}
Amount: 50

P2 Overdrive BRIGHTNESS

This Parameter adjust the amount of high frequency in the Overdrive. Higher Values will make the Overdrive more pronounced and noticeable much like guitar amp distortion. Lower Values will keep the Overdrive more subtle, much like preamp distortion.

To set the Overdrive Brightness, move the cursor beneath the Value and then turn the Value encoder to adjust the effect:

OVERDRIVE ^{P2}
Brightness: 30

<p>Tip: For an interesting overtone effect, set the Brightness Value relatively high (80 or above) and then set the Overdrive Amount very low (less than 50). This can simulate analog tape saturation or mild circuit distortion, which can be a cool vintage effect.</p>

THE DELAY EFFECTS FUNCTION



Note that the Delay Effect is monaural only – there is no stereo delay or “ping pong” delay in the DM Pro due the extensive nature of the multi-effects.

There are 6 Parameters in the Delay Effects Function:

P1 The Delay OUTPUT LEVEL Parameter

As with all of the Effects Output Levels, this Parameter sets the final output volume of the Delay Effect.

To set the Delay Output Level, move the cursor beneath the Value and then turn the Value encoder to adjust the volume of the Delay Effect:

DELAY FX ^{P1}

Level: 80

P2 The Delay INPUT MIX Parameter

The Delay Effect can be fed by two inputs: the output of the Overdrive Effect (OD) or a direct line from the OD>DL>PCH Buss (SEND). The Delay Input Mix Parameter sets the balance between the two inputs.

The display shows the two input paths (OD and SEND) with a number between them. If the Value is set to anything other than 00, an arrow will point to which signal is being favored:

DELAY FX ^{P2}

Inpt:OD50>SEND

In the above example, the Delay Input Mix is set to favor the OD>DL>PCH Buss (SEND) over the Overdrive output signal (OD) by 50%.

For a perfect balance between the two signals, set the Delay Input Mix Value to 00. For the maximum Overdrive Input, set the Delay Input Mix Value to OD<99SEND. For no Overdrive input at all, set the Delay Input Mix Value to OD99>SEND.

P3 The Delay TIME Parameter (10 msec increments)

P4 The Delay TIME Parameter (1 msec increments)

This Parameter simply adjusts the length of the Delay Effect. The Value is expressed in milliseconds (1,000 milliseconds = 1 second).

The Delay Time Value contains two cursor locations: the “tens” place, which adjusts the Delay Time in blocks of 10 milliseconds at a time, and the “ones” place, which adjusts the Delay Time by 1 millisecond at a time.

Move the cursor beneath each Value and adjust the Delay Time to taste.

Tip: To match your delay time to your tempo, use your song's tempo in "B.P.M." (Beats Per Minute) in the following equations:

Dotted Quarter note	$90 \div \text{BPM}$
Quarter note	$60 \div \text{BPM}$
Quarter note triplet	$40 \div \text{BPM}$
Dotted 8th note	$45 \div \text{BPM}$
Eighth note	$30 \div \text{BPM}$
8th note triplet	$20 \div \text{BPM}$
Dotted 16th note	$22.5 \div \text{BPM}$
Sixteenth note	$15 \div \text{BPM}$
16th note triplet	$10 \div \text{BPM}$

For example: A quarter note delay time @ 120 bpm would be figured as

$$60 \div 120 = .500$$

or 500 milliseconds (msec).

Tip: Sometimes it's useful to have a delay with a low Feedback value land ahead or behind the beat a little, especially if you're matching the audio in a sampled loop. If you want your delay to push the beat, shorten the delay time in small increments until you find the right "pocket". If you want it to drag, lengthen the delay in small increments until it sounds right.

P5 The Delay FEEDBACK Parameter

This Parameter determines how long the Delay will repeat. Higher Values give you a higher repeat count (more feedback) and lower Values give you lower repeat count (less feedback). A Feedback Value of 00 will cause the Delay to repeat only once and then stop.

 **Note that the Value represents the percentage of feedback and not the repeat count.**

To set the amount of Delay Feedback, move the cursor beneath the Value and then turn the Value encoder to adjust the Feedback amount:

DELAY FX ^{P5}
 Feedback: 40

P6 The Delay OUTPUT TO REVERB Parameter

This Parameter is not as complicated nor obscure as it sounds. Simply stated, this Parameter allows you to send the output of the Delay Effect to the Reverb Effect. By adding Reverb to the Delay Effect, it can move the delay further back in space and give you increased dimension.

To set the amount of Delay Effect that is sent to the Reverb Effect, move the cursor beneath the Value and then turn the Value encoder to adjust the Delay Output's send amount:

DELAY FX ^{P6}

Out to Rvb: 20

THE PITCH EFFECTS FUNCTION

This Function is a configurable effect that can be set to one of three Pitch Effect Types: Chorus, Flanger or Resonator.

The output of the Chorus and Flanger can also be set to stereo or mono. In the case of stereo settings, the modulation effect sweeps across the stereo image, whereas with mono settings, the modulation effect remains panned in the center.

The current Pitch Type will always appear on the top line of the display within the Pitch Effects Function. The Pitch Type is always set on Page 3 of the Pitch Effects Function, regardless of the Pitch Type selected.

The first three Parameters of the Pitch Function are always the same, regardless of the Pitch Type selected:

P1 The Pitch Effect OUTPUT LEVEL Parameter

As with all of the Effects Output Levels, this Parameter sets the final output volume of the Pitch Effect.

To set the Pitch Effect Output Level, move the cursor beneath the Value and then turn the Value encoder to adjust the volume of the Effect:

```
STEREO FLANGER P1
```

```
Outpt Level: 90
```

P2 The Pitch Effect INPUT MIX

The Pitch Effect can be fed by two inputs: the output of the Delay Effect (DEL) or a direct line from the OD>DL>PCH Buss (SND). The Pitch Effect Input Mix Parameter sets the balance between the two inputs.

The display shows the two input paths (SND and DEL) with a number between them. If the Value is set to anything other than 00, an arrow will point to which signal is being favored:

```
STEREO FLANGER P2
```

```
Inpt:DEL75>SND
```

In the above example, the Pitch Input Mix is set to favor the OD>DL>PCH Buss (SND) over the Delay Effect output signal (DEL) by 75%.

For a perfect balance between the two signals, set the Pitch Effect Input Mix Value to 00. For the maximum Delay Input, set the Pitch Effect Input Mix Value to DEL<99SND. For no Delay input at all, set the Pitch Effect Input Mix Value to DEL99>SND.

P3 The Pitch Effect TYPE Parameter

This Parameter sets the Type of Pitch Effect for the Drumkit. There are three types of Pitch Effects:

CHORUS	This effect creates a warm ensemble sound, especially useful for pitched instruments such as vibes and bells.
FLANGER	This effect creates a sweeping sound which, when set to a moderate amount can be reminiscent of ocean waves, or when set to an extreme amount can be reminiscent of a jet airplane flying overhead.
RESONATOR	This effect creates a metallic sound, emphasizing the strongest frequencies of the timbre effected. It is particularly useful for electronic sounds, where it can add the edge needed to cut through a mix more.

The Chorus and the Flanger can be configured as stereo or monaural effects, which gives you five possible choices for the Pitch Effect Type:

Mono Chorus

Stereo Chorus

Mono Flange

Stereo Flange

Resonator

Following is an overview of the various Pitch Effect Parameters:

PITCH TYPE: CHORUS OR FLANGER

Both the Chorus and Flanger share the same Parameter pages for their Values:

P4 The SPEED Parameter

This Parameter sets the rate at which the Effect will sweep. Lower values will create a slower, more subtle sweep, while higher values will create a more intense effect.

Tip: For a natural ensemble sound, set the Speed to a Value of 30 or lower. For radical rotating speaker or tremolo / vibrato effects, set the Speed to a Value of 40 or higher.

P5 The SHAPE Parameter

This Parameter sets the shape of the LFO waveform that drives the Pitch Effect. For a smooth, more subtle ensemble effect, select SINE. For a stronger, more noticeable effect, select TRIANGLE.

P6 The DEPTH Parameter

This Parameter sets the intensity or amplitude of the Effect. The higher the Value, the more pronounced the Effect.

P7 The FEEDBACK Parameter

This Parameter sets the amount of resonance in the Effect. Higher Feedback Values will cause the sweep to become more noticeable. Lower Values can increase the intensity of the Effect beyond the maximum Depth setting but still keep the Effect sounding smooth and natural.

P8 The OUTPUT TO REVERB Parameter

Like the similarly named Delay Effect Parameter, this Parameter allows you to send the output of the Pitch Effect to the Reverb Effect. By sending the Pitch Effect to the Reverb, it can add richness to the overall effect sound and give you increased warmth and spatial dimension.

To set the amount of Pitch Effect that is sent to the Reverb Effect, move the cursor beneath the Value and then turn the Value encoder to adjust the Pitch Output's send amount:

STEREO FLANGER ^{P8}

Out to Rvb: 80

PITCH TYPE: RESONATOR

The first three pages of the Resonator Pitch Effect Type are the same as those for the Chorus and Flanger. Only Pages 4 - 6 differ.

P4 The Resonator TUNING Parameter

This Parameter adjust the relative pitch of the Resonator Effect to the source that feeds it. By adjust the Value to taste, you can bring out specific frequencies of the source Drum.

P5 The Resonator DECAY Parameter

Since the Resonator Effect is generated by a very short feedback delay, increasing the feedback (Decay) will extend the source sound and make the resonating effect more pronounced.

P6 The Resonator OUTPUT TO REVERB Parameter

This Parameter behaves exactly like the corresponding Delay, Chorus and Flanger Parameters, allowing you to send the output of the Resonator to the Reverb Effect.

To adjust the level of the Resonator that is sent to the Reverb Effect, move the cursor beneath the Value and then turn the Value encoder to adjust the Resonator Output's send amount:

RESONATOR ^{P6}

Out to Rvb: 99

THE EQUALIZER EFFECTS FUNCTION

The DM Pro has a boost-only, two band shelving Equalizer that changes the output contour of a Drumkit. There are four total Equalizer Parameters: two Parameters for each Equalizer band.

P1 Equalizer HIGH FREQUENCY SELECT

This Parameter allows you to choose the frequency for the high-shelving Equalizer. The Values are selectable in 1kHz steps from 3kHz to 10kHz. The Value you choose determines where the high-frequency boost begins. Because it is a high shelving EQ, all frequencies above the selected frequency will be boosted by the amount set by the High Frequency Gain parameter on Page 2 (see below).

To adjust the High Frequency setting of the Equalizer, move the cursor beneath the Value (in kHz) and then turn the Value encoder:

```
EQUALIZER P1  
Hi Freq: 10kHz
```

P2 Equalizer HIGH FREQUENCY GAIN

This Parameter allows you to set the amount of high frequency boost for the Equalizer in decibels. The boost Value is selectable in 1dB steps from 0dB to +9dB. Remember that the DM Pro Equalizer is “boost only” – you may not cut high frequencies with the Equalizer. To cut high frequencies in the DM Pro, use the Filter Function found in Drum Edit Mode.

To set the High Frequency boost amount (or “gain”), move the cursor beneath the Value (in dB) and then turn the Value encoder:

```
EQUALIZER P2  
Hi Gain: +6dB
```

P3 Equalizer LOW FREQUENCY SELECT

This Parameter allows you to choose the frequency for the low - shelving Equalizer. The Values are selectable in 30Hz steps from 30Hz to 180Hz. The Value you choose determines where the low-frequency boost begins. Because it is a low shelving EQ, all frequencies below the selected frequency will be boosted by the amount set by the Low Frequency Gain parameter on Page 4 (see below).

To adjust the Low Frequency setting of the Equalizer, move the cursor beneath the Value (in Hz) and then turn the Value encoder:

```
EQUALIZER P3  
Lo Freq: 120Hz
```

P4 Equalizer LOW FREQUENCY GAIN

This Parameter allows you to set the amount of low frequency boost for the Equalizer in decibels. The boost Value is selectable in 1dB steps from 0dB to +12dB. Remember that the DM Pro Equalizer is “boost only” – you may not cut low frequencies with the Equalizer.

To set the Low Frequency boost amount, move the cursor beneath the Value (in dB) and then turn the Value encoder:

EQUALIZER P4

Lo Gain: +12dB

This completes the discussion of the DM Pro Effect Processor. Remember that all Effects Values are stored with a Drumkit. Be sure to save your edits into an available location before changing Drumkits or your Effects editing work will be lost!

PROGRAMMING DRUMS

Drum Edit Mode is lowest level of the DM Pro, where the actual shaping of timbres takes place. Drum Edit Mode is for advanced operation only as it is substantially more complex than any of the other Modes. For most applications, you can likely accomplish your desired task from within Drumkit Mode, which is discussed in the previous section. However, if you want to create new composite drum or percussion sounds from scratch, or if you want to edit existing Drums, read on.

Drum Edit Mode is where you edit the Parameters which make up a Drum. Each DM Pro Drum is composed of up to four Sounds, and each Sound has its own unique Parameter Values.

To enter or return to Drum Edit Mode, press [DRUM] and then [EDIT].

There are 11 Functions in Drum Edit Mode:

Sound Select

Voice Select

Level

Pitch

Filter

Amplitude

Pitch Envelope

Filter Envelope

Amplitude Envelope

Modulation Matrix

Drum Name

THE SOUND SELECT FUNCTION

The Sound Select Function contains no Parameters – it exists on only one level and is always available to you in Drum Edit Mode as the first item in the display. This is because as you edit multiple Sounds within a Drum, you will constantly want to move between Sounds as you fine tune the interaction of the four Sounds with each other.

To change Sounds within a Drum, simply move the cursor beneath the Sound Number (1 -4) and then turn the Value encoder to select the desired Sound:

SND4:VOICE ^{P2}

Group: Hi Hat

Note that each Sound within a Drum can be enabled or disabled. The Sound Enable Parameter is the very first Parameter in Drum Edit Mode and is described below. The following convention applies at all times in Drum Edit Mode: When a Sound is enabled, it will be displayed in UPPERCASE letters (SND1). When a Sound is disabled, it will be displayed in lowercase letters (snd1).

THE VOICE SELECT FUNCTION

This Function determines first whether or not a Sound is enabled, and then second, which “Voice” (or sample) a DM Pro Sound will use.

P1 The SOUND ENABLE Parameter

As mentioned above, each of the four Sounds within a DM Pro Drum can be enabled or disabled. Enabled Sounds are displayed in UPPERCASE (i.e., SND3), and disabled Sounds are displayed in lowercase (i.e., snd3).

To enable or disable a Sound, select that Sound using the Sound Select Function (described above), and then move the cursor beneath the Sound Enable Value:

```
SND2:VOICE P1
Snd Enable: ON
```

The Value encoder will toggle the Parameter Value between ON and OFF:

```
snd2:VOICE P1
Snd Enable: OFF
```

Tip: There’s a quick way of muting and unmuting Sounds from wherever you may be in Drum Edit Mode. This is done by pressing and holding the EDIT button and then hitting <TRIGGER to mute the currently selected Sound or holding the EDIT button and hitting TRIGGER > to unmute the current Sound.

P2 The VOICE GROUP Parameter

To help keep track of the hundreds of Voices inside the DM Pro, Voices are organized inside what are called “Voice Groups”. Voice Groups are to Voices in Drum Edit Mode just as Drum Groups are to Drums in Drumkit Mode.

Select the type of Voice you want to occupy the current Sound by moving the cursor beneath the Voice Group Name:

```
SND1:VOICE P2
Group: AcKick
```

Turn the Value encoder to select one of the 13 Voice Groups in the DM Pro. Here is a listing of the 13 Voice Groups:

AcKick	Acoustic Kicks
ElKick	Electronic Kicks
AcSnar	Acoustic Snares
ElSnar	Electronic Snares
Tom	Toms
Hi Hat	Hi-hats
Cymbal	Cymbals
AcPrc1	Acoustic Percussion 1

AcPrc2	Acoustic Percussion 2
EIPerc	Electronic Percussion
SndEfx	Sound Effects
Reverb	Sampled Reverbs
Chrmtc	Chromatic (pitched percussion)

Tip: You will notice that the 13 Voice Groups are remarkably similar to the 13 Drum Groups that exist within Drumkit Mode. The one difference is that the USER Drum Group has been replaced with the REVERB Voice Group. The Reverb Voice Group contains various sampled instances of specific drum reverberations that can be layered very effectively with normal, dry drum samples to create rich ambient timbres that may, in turn, be sent through the DM Pro Effects Processor. Think of it as recording a somewhat ambient drum through a set of mics and then processing it with outboard effects.

P3 The SOUND SELECT Parameter

This Parameter determines the actual Voice that will occupy a Sound. Once you have selected a suitable Voice Group as described above, you can now select a specific Voice to occupy the current Sound.

Move the cursor beneath the Parameter Value to select your desired Voice to occupy the Sound:

SND1:VOICE ^{P3}
Snd:Db1 Head A

As usual, move the Value encoder to scroll through the various Voices to find your desired choice.

THE LEVEL FUNCTION

The Sound Level Function contains only two Parameters: Volume and Pan. Think of this Function as the very bottom section of a four channel stereo mixing board.

P1 The SOUND VOLUME Parameter

This Parameter simply sets the level of the currently selected Sound. To set the Sound level, move the cursor beneath the Parameter Value and then turn the Value encoder to the desired volume:

SND1:LEVEL ^{P1}
Snd Volume: 90

P2 The SOUND PAN Parameter

This Parameter sets the position of the currently selected Sound within the stereo field. The Sound Pan Parameter has seven possible settings:

<3	Panned hard left
<2	Panned moderately left
<1	Panned slightly left
<>	Panned center

1>	Panned slightly right
2>	Panned moderately right
3>	Panned hard right

To set the Sound to your desired Pan position, move the cursor beneath the Parameter Value and then turn the Value encoder to the Pan the Sound:

```
SND1:LEVEL P2  
Snd Panning: ≤1
```

THE PITCH FUNCTION

The Pitch Function has four Parameters that all determine the Pitch, or tuning, of an individual Sound.

P1 The SEMITONE Parameter

This Parameter is the “gross” Pitch adjuster in the Pitch Function. Changing this Value will alter the Pitch of the Sound in 100 cent steps (a musical half step). The maximum range of this Parameter is up or down 24 half steps, or two octaves in either direction. Negative Pitch Values (downward Pitch shifts) are indicated by a “-” before the Value. Using this Drum Edit Parameter combined with the Drum Tune Function, you can shift a sample across a range of eight octaves.

To change the Pitch of a Sound by a Semitone or Semitones, move the cursor beneath the Parameter Value and then turn the Value encoder to tune the Sound to the desired Semitone:

```
SND1:PITCH P1  
Semitone: 12
```

P2 The DETUNE Parameter

This Parameter is the “fine” Pitch adjuster in the Pitch Function. Changing this Value will alter the Pitch of the Sound in 1/2 cent steps (100 cents = 1 musical half step). The maximum range of this Parameter is up or down one quarter tone, or “half of a half step”, in either direction. As with the Semitone Parameter, negative Pitch Values (downward Pitch shifts) are indicated by a minus sign (-) before the Value.

To change the Pitch of a Sound in 1/2 cent increments, move the cursor beneath the Parameter Value and then turn the Value encoder to Detune or “fine tune” the Sound to taste:

```
SND1:PITCH P2  
Detune: -30
```

In the above example, the Sound is Detuned flat (down) by 15 cents.

P3 The PITCH WHEEL TO PITCH Parameter

This Parameter sets the DM Pro to allow the Pitch Bend Wheel on a MIDI controller to modify the Pitch of an individual Sound. The Value is adjusted in increments of a musical half step (100 cents) with a maximum range of one octave in either direction.

Since the MIDI specification calls for a Pitch Bend Wheel to bend the Pitch of a Sound both up and down, this Parameter is an absolute value only – it is neither positive nor negative, merely a range amount.

To set the range that a MIDI Pitch Bend Wheel can alter the Pitch of a Sound, move the cursor beneath the Parameter Value and then turn the Value encoder to set the semitone range:

```
SND1:PITCH P3  
PWHL>PITCH: 02
```



This Parameter may seem silly on a drum module, but do not overlook the usefulness of pitch bending hand drums, especially ethnic drums that are designed to change pitch such as udus or talking drums.

P4 The PITCH ENVELOPE TO PITCH Parameter

This Parameter determines how much the Pitch Envelope Function will affect the Pitch of the current Sound. The default value is 00, meaning that the Pitch Envelope has no effect on the Sound's Pitch. However, certain hand drums and even toms can benefit from some "automatic pitch bend" which can be programmed with the Pitch Envelope.

To set the amount that you wish the Pitch Envelope to modify the current Sound's Pitch, move the cursor beneath the Parameter Value and then turn the Value encoder:

```
SND1:PITCH P4  
PENV>PITCH: 50
```

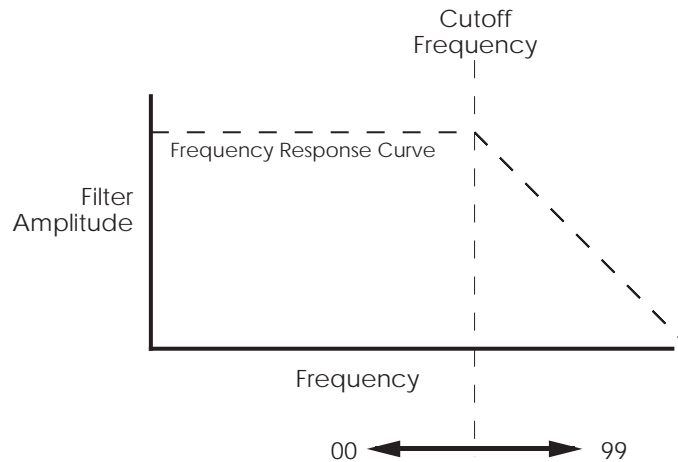
Note that negative Values will "invert" the Envelope, allowing you to create very esoteric pitch effects with the Pitch Envelope. Remember that "inverting" is not the same as "reversing" – the envelope will still play in a forward direction (attack is still attack, release is still release, etc.) but the Pitch will be modulated in the opposite direction from a non-inverted (normal) envelope.

THE FILTER FUNCTION

The Filter Function determines the brightness of an individual Sound by controlling the low pass filter attached to each of the 64 DM Pro Voices.

The low pass filter affects a Sound's harmonic content by progressively attenuating high frequencies above the specified "Cutoff Frequency". The higher frequencies are filtered, while the lower frequencies are allowed to "pass through", hence the term "low pass filter". When the Cutoff Frequency is set to a high Value, the sound remains bright; when set to a low Value, the sound becomes darker since fewer harmonics are present.

The DM Pro Filter cuts, or "rolls off" high frequencies in the amount of 6dB per octave. For example, if the Cutoff Frequency is set to begin the high frequency rolloff at 5kHz, 10kHz would be 6dB softer than 5kHz, and 20kHz would be 12dB softer than 5kHz. The lower the Filter settings, the darker the Sound. Note that the Filter is subtractive only – it cannot boost high frequencies.



The cutoff parameter changes the frequency at which the high-frequency response starts to roll off. Lower values give a lower cutoff frequency. A value of 00 will cut all sound off.

Static (non-changing) Filter settings can be useful, but varying the filter cutoff dynamically over time with an Envelope can produce more interesting and even more natural sounding effects. Modulating the Filter with Velocity can allow sounds to be brighter when playing hard and darker when playing soft, which can result in a very accurate acoustic instrument emulation.

It is important to remember that all of the Filter Parameters are both interactive and cumulative, meaning that if you set the Cutoff Frequency to 40 and the Filter Envelope Amount to 40, the resulting Filter Cutoff Frequency will be 80 (assuming a wide open envelope). Also, be aware that contrary Filter Values can easily nullify each other, so be sure to set each Filter Parameter toward a common effect. Arbitrary Filter settings can be your undoing!

Used carefully and creatively, the Filter can be a highly effective dynamic tone control for a DM Pro Sound.

The Filter Function has four interrelated Parameters: Cutoff Frequency, Velocity to

Filter, Modulation Wheel to Filter and Filter Envelope to Filter.

P1 The CUTOFF FREQUENCY Parameter

This Parameter sets the basic brightness of the Filter. Like all Filter Parameters, the Cutoff Frequency Parameter can be overridden by other Filter Parameters, but this is generally the place to start when constructing a Filter setting.

To set the Cutoff Frequency for an individual Sound, move the cursor beneath the Parameter Value and then turn the Value encoder:

```
SND1:FILTER P1  
Frequency: 70
```

Note that a Value of 99 completely opens the Filter, essentially negating it. Similarly, a Value of 00 completely closes the Filter, cutting all frequencies and effectively silencing the Sound.

However, as mentioned above, the other Filter Parameters can also raise and lower the Filter, so these extreme settings are not necessarily as outlandish as they may seem when used in conjunction with other Filter Parameters. For example, if you plan to use the Filter Envelope, it is a good idea to keep the Cutoff Frequency very low or even at 00 in order to give the Filter Envelope maximum operating range.

P2 The VELOCITY TO FILTER Parameter

This Parameter allows incoming Velocity from either a Trigger or MIDI to dynamically modulate the Filter Frequency either up or down. Positive Values cause incoming Velocities to open the Filter (raise the Cutoff Frequency), whereas negative Values cause incoming Velocities to close the Filter (lower the Cutoff Frequency). The higher the incoming Velocity (the harder the hit), the greater the effect on the Filter.

To set the amount that Velocity will modulate the Filter, move the cursor beneath the Parameter Value and then turn the Value encoder:

```
SND1:FILTER P2  
VELO>FILT: 10
```

P3 The MODULATION WHEEL TO FILTER Parameter

This Parameter is very similar to the Velocity to Filter Parameter described above. However, instead of Velocity dynamically modulating the Filter Cutoff Frequency, Modulation Wheel data received via MIDI will either raise or lower the Filter Cutoff Frequency depending on whether the Value is positive or negative respectively.

To set the amount that Modulation Wheel data will modulate the Filter, move the cursor beneath the Parameter Value and then turn the Value encoder:

```
SND1:FILTER P3  
MODWH>FILT: -20
```

In the above example, the Modulation Wheel to Filter Parameter has been given a negative Value, which means that as the Modulation Wheel is moved up, Sound 1's Cutoff Frequency will be lowered and the Filter will close, making the Sound darker.

P4 The FILTER ENVELOPE TO FILTER Parameter

This Parameter is identical in concept to the Pitch Envelope to Pitch Parameter (described above in the Pitch Function) except that in this case the envelope controls the Filter Cutoff Frequency and not Pitch. The Filter Envelope to Filter Parameter determines how much the Filter Envelope Function will affect the Filter Cutoff of the current Sound.

To set the amount that you wish the Filter Envelope to modify the current Sound's Filter Cutoff Frequency, move the cursor beneath the Parameter Value and then turn the Value encoder:

```
SND1:FILTER P4  
F-ENV>FILTER: 99
```

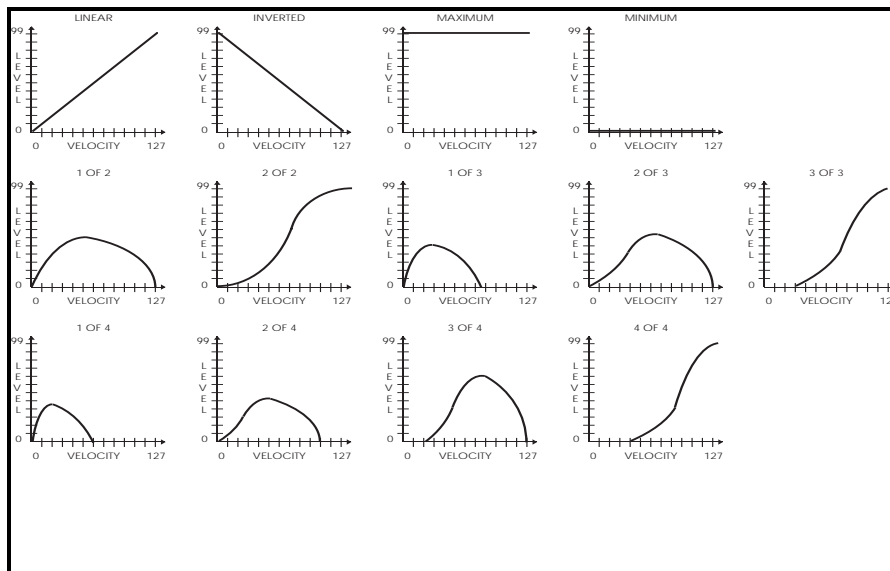
Like the Pitch Envelope, note that negative Values will "invert" the Envelope, allowing you to create less conventional envelope shapes. Remember that "inverting" is not the same as "reversing" – the envelope will still play in a forward direction (attack is still attack, release is still release, etc.) but the Filter Cutoff Frequency will be modulated in the opposite direction from a normal envelope.

THE AMPLITUDE FUNCTION

This Function sets the volume response of an individual Sound. It contains two Parameters: Velocity Curve and Sound Overlap.

P1 The VELOCITY CURVE Parameter

This Parameter defines the range in which a Sound will play based on incoming velocity. It can be very powerful for creating “windows” for Sounds that can, when used in combination with other complementary Sounds, result in an expressive and dynamic Drum that musically changes timbre depending on the velocity of the note struck. There are 13 possible Values for this Parameter:



To set the Velocity Curve for the current Sound, move the cursor beneath the Parameter Value and then turn the Value encoder:

```
SND1:AMPLITUDE P1
VelCrv: 1of2XFD
```

All of these possible curves may seem confounding at first, but just think of them as a window through which one Sound’s Voice can pass. Following is an example of a typical use for multiple Velocity Curves. In this example, the four Sounds have related but unique Voices set to the following Velocity Curve Values:

SOUND	VOICE	VELCRV
1	Soft Snare	1 of 4
2	Medium Snare	2 of 4
3	Hard Snare	3 of 4

Programming Drums

4

Rimshot Snare

4of4

In the example on the previous page, the Soft Snare Voice will sound at very low velocities, the Medium and Hard Snare Voices will sound at moderate to hard velocities, and the Rimshot Share Voice will sound will very hard velocities, creating a highly responsive and very musical Drum.

A NOTE ABOUT THE PREVIEW BUTTON AND VELOCITY CURVES

The [PREVIEW] button is a very handy tool for hearing the edit you've made without having to turn away from the front panel of the DM Pro. It will play the currently selected Drum or Sound(s) at a MIDI velocity of 127 (maximum). Since this is the case, keep in mind that you will not hear any Sounds which were programmed using a velocity curve of 1 of 2, 1 of 3, 1 of 4, 2 of 3, 2 of 4, 3 of 4, INVERTED or MINIMUM. Each of these velocity curves is set up to be completely silent (or nearly so) when a velocity value of 127 is received.

P2 The SOUND OVERLAP Parameter

This Parameter determines how long a Sound will play when the same note is triggered immediately after it. With the Sound Overlap set to its maximum Value, polyphony will be used very rapidly as each Sound plays completely to its expected finish. Conversely, if you combine a minimum setting of the Sound Overlap parameter with a Gate Time of 001 and an Amplitude Envelope Trigger Mode setting of NORMAL or RESET, each new hit of the same note will instantly choke the previous Sound, regardless of its programmed length, creating a very unnatural "machine gun" style effect.

The default Value for this Parameter is 20, which is a good starting place. The ideal Sound Overlap Value will vary from timbre to timbre. As always, your ear is the best judge, so experiment with different settings.

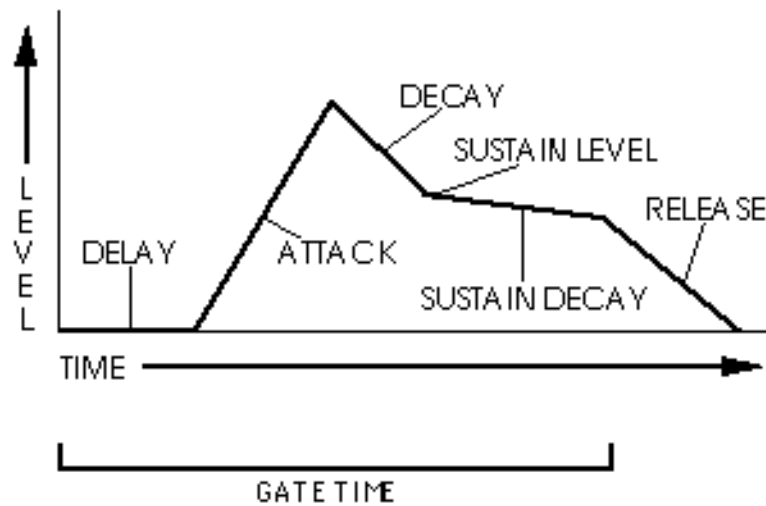
To set the Sound Overlap Value for the current Sound, move the cursor beneath the Parameter Value and then turn the Value encoder:

SND1:AMPLITUDE P2

Snd Overlap: 20

THE THREE ENVELOPE GENERATOR FUNCTIONS

Envelope generators provide a modulation shape that varies over time. The DM Pro contains three Envelopes per Sound, giving you incredibly specific control over each Voice within a Drum. Each DM Pro Envelope has six “stages”: The Envelopes contain the standard Attack, Decay, Sustain, and Release Parameters found on most synthesizers along with the powerful addition of Envelope Delay and Sustain Decay Parameters. There are also four different Envelope triggering options to help you specifically scale the response of the Envelope to suit your application, as well as an Envelope Level Parameter to control the amplitude of each entire Envelope Function.



The three Envelopes of the DM Pro are preset to control Pitch, Filter and Amplitude. Although these are the normal routings, using the Modulation Matrix, you can program any of the Envelopes to control separate or additional Parameters. For example, if you need more specific Filter control than is provided with the normal paths, route the Pitch Envelope to modulate the Filter. With this routing you will have two Envelopes with which to sculpt an elaborate Filter curve, contouring the tone of the Sound with microscopic control.

The Envelope GATE TIME Parameter

This Parameter controls all three Envelopes, but only appears within the Amplitude Envelope Function. This Parameter controls how long the Envelope will remain in its Sustain stage (described below). It can be thought of as “Hold Time” as it simulates a key being held on a MIDI keyboard. Since the DM Pro does not respond to the MIDI Note Off command, and a drum pad is not really suited to send a Note Off, the Envelope Gate Time Parameter allows you to pre-program this Value for each Sound within a Drum.

The Envelope TRIGGER Parameter

This Parameter is found in each of the three Envelopes and drastically affects the Envelopes' behavior. There are four possible Values for the Envelope Trigger Parameter:

NORMAL	With this Value, the Envelope will always start at its current level (i.e., if another note had been played to previously initiate the Envelope's cycle, playing another note would not interrupt the cycle). With a Value of NORMAL , the Envelope will immediately advance to the Release stage when either the Envelope Gate Time is exhausted or the Sustain Pedal is released (whichever comes last).
FREERUN	With this Value, the Envelope will move through its Delay, Attack and Decay stages and then remain in its Sustain stage until the Envelope Gate Time becomes exhausted or the Sustain Pedal is released. If the Envelope Gate Time becomes exhausted or the Sustain Pedal is released somewhere in the middle of the Attack or Decay stage, the Envelope will continue through the Decay stage and then jump to the Release stage.
RESET	When set to RESET , the Envelope will always start at the beginning (hence "reset") whenever a new note is played, regardless of whether the Envelope has run its course. With a Value of RESET , like NORMAL , the Envelope will immediately advance to the Release stage when either the Envelope Gate Time is exhausted or the Sustain Pedal is released (whichever comes last).
RESET-FREERUN	When set to RESET-FREERUN , the Envelope will start at the beginning whenever a new note is played and it will move through its Delay, Attack and Decay stages and then remain in its Sustain stage until the Envelope Gate Time becomes exhausted or the Sustain Pedal is released. Like FREERUN , if the Envelope Gate Time becomes exhausted or the Sustain Pedal is released somewhere in the middle of the Attack or Decay stage, the Envelope will continue through the Decay stage and then jump to the Release stage.

The Envelope DELAY Parameter

This Parameter determines the amount of time that the Envelope will wait before doing anything. It is very useful for affecting certain Parameters of a Sound sometime after the Sound starts. When the Delay is set to 00, the envelope begins its Attack stage immediately, without any Delay. If you repeatedly play a note while increasing the Envelope Delay Value, you will notice that the time between triggering the note and the time that you hear the effect of the Envelope gets progressively longer as the Envelope Delay Value is increased.

If the Delay is set above 99, the display will read **HOLD**. This indicates that the Delay stage of the Envelope will wait until either the Envelope Gate Time is exhausted or

the Sustain Pedal is released (whichever comes last) before continuing on to the remaining Envelope stages (Attack, Decay, etc.).

The Envelope ATTACK Parameter

This is the amount of time the Envelope will take until it reaches its maximum output level. Setting the Attack to 00 will make the Envelope go to its maximum level immediately upon triggering the note (assuming a Envelope Delay Value of 00). A setting of 99 will result in a substantially slower attack, taking quite a while for the Envelope to reach its maximum level.

The Envelope DECAY Parameter

As soon as the Attack stage of the envelope is complete (when the initial Envelope level reaches its maximum level), the Envelope will then Decay (decrease in level) over time. The time it takes the Envelope to Decay is set by the Envelope Decay Parameter.

Depending on the Envelope Trigger Parameter Value, the Envelope will either Decay to 00, or continue on through the Sustain, Sustain Decay and Release stages.

The Envelope SUSTAIN Parameter

The level that the Decay Parameter ultimately reaches is set by the Sustain Parameter. If the Sustain Parameter is set to its maximum Value (99), then the Decay Parameter will have no effect because there is no decrease in the Envelope level.

To jump ahead slightly, note that if the Sustain Decay Parameter (described immediately below) is set to a Value of 99, the Envelope will hold at the Sustain level until either the Gate Time is exhausted or the Sustain Pedal is released (whichever comes last). If the Sustain Decay Parameter is set to a Value of 98 or less, the Envelope will decay to 00 at the rate set by the Sustain Decay Parameter.

The Envelope SUSTAIN DECAY Parameter

This is the amount of time that the Envelope will take upon reaching the Sustain stage to bring the level down to 00. The Sustain Decay Parameter can be thought of as a second Decay Parameter that begins after the first Decay Parameter ends.

If the Sustain Decay Parameter is set to a Value of 98 or less, the Envelope will decay to 00 at the rate set by the Sustain Decay Parameter.

If the Sustain Decay Parameter is set to a Value of 99, the Parameter will have no effect – the Envelope will remain at the Sustain level until either the Gate Time is exhausted or the Sustain Pedal is released (whichever comes last). When the Sustain Decay Parameter is set to a Value of 00, the Envelope's level will immediately jump to 00 upon reaching the Sustain stage.

The Envelope RELEASE Parameter

The Envelope will reach the Release stage when either the Gate Time is exhausted or the Sustain Pedal is released (whichever comes last). The Release stage sets the time that the Envelope takes to get from its current level back down to 00. Setting the Release time to 99 will make the Envelope take an excruciatingly long time to reach zero level, while setting the Release Value to 00 will cause the Envelope to instantly crash to zero, essentially choking off the Envelope. Values in between offer many musical options which will be different for each Sound.

The Envelope SUSTAIN PEDAL Parameter

This Parameter determines whether or not the Sustain Pedal of a MIDI controller will affect the Envelope. As you can imagine, when set to OFF, this Parameter does nothing. When set to ON, incoming Sustain Pedal messages affect the Envelope in one of two ways depending on the Value of the Envelope Trigger Parameter:

If the Envelope Trigger Parameter is set to NORMAL or RESET, when the controller's Sustain Pedal is depressed, the Envelope will jump to and remain in the Sustain stage of the Envelope until either the Sustain Decay reaches 00 or the Sustain Pedal is released.

If the Envelope Trigger Parameter is set to FREERUN or RESET-FREERUN, when the Sustain Pedal is depressed, the Envelope will continue through its Attack and Decay stages and then remain in the Sustain stage of the Envelope until either the Sustain Decay reaches 00 or the Sustain Pedal is released.

Note that if the Envelope Gate Time exceeds the duration that the Sustain Pedal is depressed, the Gate Time Value will keep the Envelope in the Sustain stage until the Gate Time is exhausted. Similarly, if the time that the Sustain Pedal is depressed exceeds the Gate Time Value, the Envelope will remain in the Sustain stage until the Sustain Pedal is released.

The Envelope LEVEL Parameter

This Parameter sets the overall output level of the Envelope. If the Envelope Level is set to a Value of 00, the Envelope will have no output and subsequently no effect. If the Envelope Level is set to a Value of 99, it will have the maximum effect on the Function it modulates.

The Envelope VELOCITY MODULATION Parameter

This Parameter only exists in the Pitch Envelope and the Filter Envelope (not in the Amplitude Envelope). In the display, it is referred to as VEL>PLevel for the Pitch Envelope and VEL>FLevel for the Filter Envelope. The Envelope Velocity Modulation Parameter determines how incoming velocity will affect the Envelope level. When set to a Value of 99, incoming velocity will dramatically increase the Envelope's output – notes played hard will deliver a higher Envelope output than notes played soft. When set to a Value of 00, incoming velocity will have no effect on the Envelope's output level. When set to a Value of -99, incoming velocity will have an inverse effect on the Envelope; that is, the harder the hit, the lower the Envelope output level.

Note that if the Envelope Level Parameter is set to a Value of 99, a positive Value of any sort for the Envelope Velocity Modulation Parameter will have no effect because the Envelope is already set to its maximum output. To use this Parameter effectively, lower the Envelope Level Parameter proportionate to the Envelope Velocity Modulation Parameter so that their combined Value does not exceed 99. Combined values above 99 will simply be treated as 99, and your dynamic range will be reduced.

ABOUT THE INDIVIDUAL ENVELOPES

Now that we have explored the various Envelope Parameters that are common to all three Envelopes, following is an examination of each specific Envelope and how it differs from the others.

THE PITCH ENVELOPE FUNCTION

The Pitch Envelope Function causes the pitch of a single Sound to change over time. It is typically used in the DM Pro to simulate the scooping or diving pitch characteristics of some hand drum instruments or even conventional kit drums. It can also be used more radically for outlandish sound effects.

It is essential to note that the Pitch Envelope Parameters will only affect the Sound's pitch if the PENV>PITCH Parameter (Page 4 of the Drum Edit Mode Pitch Function) is set to a Value other than 00, or if Pitch Envelope is a source in the Modulation Matrix Function with an amount set to a Value other than 00. In other words, the Pitch Envelope must be programmed to modulate the Sound's pitch – it is not automatically set up to do so.

The Pitch Envelope is unique from the other two Envelopes in that its Release time can be set above 99. When set above 99, the Value in the display will read HOLD. This indicates that the Pitch Envelope will remain at its current level even after the Gate Time is exhausted or the Sustain Pedal is released. This is important when you want the Pitch effect to remain even after releasing the key. For example, if the Pitch Envelope is bending a note up, and you don't want the pitch to fall after the Gate Time is exhausted, set the Pitch Envelope Release Value to HOLD.

THE FILTER ENVELOPE FUNCTION

The Filter Envelope Function causes the harmonic content of a single Sound to change over time. It is typically used in the DM Pro to simulate the natural occurrence where high frequencies decay faster than low frequencies. For example, the initial attack of a crash cymbal is bright and contains much high frequency content, but as the cymbal decays (dies out), its timbre becomes darker and more sublime. The Filter Envelope can very accurately simulate this phenomenon.

Like the Pitch Envelope, it is essential to note that the Filter Envelope Parameters will only affect the Sound's tone if the F-ENV>FILT Parameter (Page 4 of the Drum Edit Mode Filter Function) is set to a Value other than 00, or if Filter Envelope is a source in the Modulation Matrix Function with an amount set to a Value other than 00.

Tip: For the most dynamic and noticeable Filter Envelope motion, set the Amplitude Envelope Sustain level to its maximum Value and then control the tone of the Sound entirely with the Filter Envelope (especially the Decay and Sustain Parameters).

Note that the Filter Envelope may have no effect if the Values set in the Filter Function or some other modulation source have already moved the Filter Cutoff Frequency to its maximum Value.

THE AMPLITUDE ENVELOPE FUNCTION

The Amplitude Envelope is really the last word of a DM Pro Sound. This Function controls the volume of a Sound over time.

While the Pitch and Filter Envelopes require programming in order to affect their parent Functions (Pitch and Filter), no such requirement exists for the Amplitude Envelope. You will notice that there is no Parameter called A-ENV>AMP in the Amplitude Function. This is because the Amplitude Envelope is “hardwired” at the end of the signal chain. Unless stages are modulated otherwise in the Modulation Matrix, all Amplitude Envelope Parameters will have direct control over the volume of the Sound. For example, by moving the Amplitude Envelope Delay Parameter, you will delay the start of the actual Sound itself. However, keep in mind that the Pitch and Filter Envelopes act independently of the Amplitude Envelope and must have their own Delay Values set accordingly if you want all three Envelopes to be synchronized.

Note that the Amplitude Envelope Level Parameter, because it controls amplitude, literally acts as a volume control over the Sound. The difference between this Parameter and the Sound Level Parameter (Page 1 of the Drum Edit Mode Level Function) is that the Amplitude Envelope Level Parameter can be modulated, or changed over time.

THE MODULATION MATRIX FUNCTION

SND1:MOD 1 P1

Src: Velocity

This Function allows you create non-standard modulation routes or control signal paths within the DM Pro for expressive and/or esoteric performance effects.

Although there are many dedicated, or “hardwired” modulation routes in the unit (e.g., the Filter can always be modulated by the Velocity and Filter Envelope), the programming architecture allows you to create two custom modulation routes per Sound for maximum creative control over each Voice.

The DM Pro arranges its Modulation Source outputs and Modulation Destination inputs into a “matrix” so that any selected Source can affect one of several Destinations.

There are two general purpose Matrix Modulators which allow you to control two Parameters from your choice of Modulation Sources. The Modulation Matrix Function gives you the freedom to create routes outside of the standard modulation paths contained in the other Drum Edit Mode Functions.

Tip: When creating a custom modulation route with the DM Pro Modulation Matrix, make sure that you are not making a connection that already exists in the unit. Following is a list of routings are already "hardwired" into the DM Pro:

SOURCE	DESTINATION	LOCATION
Mod Wheel	Filter Cutoff	Filter Function
Velocity	Filter Cutoff PENV Level FENV Level	Filter Function PENV Function FENV Function
Pitch Wheel	Pitch	Pitch Function
PENV	Pitch	Pitch Function
FENV	Filter Cutoff	Filter Function

P1 The MODULATION SOURCE Parameter

This Parameter determines the Source of the Modulation, or, what will control the Destination. Using one of the above hardwired examples where Velocity modulates Filter Cutoff, Velocity is the Source and Filter Cutoff is the Destination.

This highly flexible routing scheme harkens back to the original modular synthesizers where you would physically plug a patch cord from one module to another to create a modulation path. The DM Pro gives you similar flexibility, but without the cords (it's neater that way). There are 16 Modulation Sources in the DM Pro, each of which can control any of the 22 Modulation Destinations.

Following is a list of the 16 DM Pro Modulation Sources:

- Velocity
- Modulation Wheel
- Pitch Wheel
- MIDI Volume
- Sustain Pedal
- Pitch Envelope
- Filter Envelope
- Amplitude Envelope
- Random
- Trigger Rate
- Controllers A - D (note that these are four separate sources)
- Aux Pedal
- Hat Pedal

P2 The MODULATION DESTINATION Parameter

This Parameter determines the Destination of the Modulation, or, what will be controlled by the Source. There are 21 Modulation Destinations in the DM Pro, each of which is a Parameter that has been described within its respective Function above.

Following is a list of the 21 DM Pro Modulation Destinations:

- Pitch
- Filter Cutoff
- Amplitude
- Pitch Envelope Delay
- Pitch Envelope Attack
- Pitch Envelope Decay
- Pitch Envelope Sustain Decay
- Pitch Envelope Release
- Pitch Envelope Amplitude (PENV Level)
- Filter Envelope Delay
- Filter Envelope Attack
- Filter Envelope Decay
- Filter Envelope Sustain Decay
- Filter Envelope Release
- Filter Envelope Amplitude (FENV Level)
- Amplitude Envelope Delay
- Amplitude Envelope Attack
- Amplitude Envelope Decay
- Amplitude Envelope Sustain Decay
- Amplitude Envelope Release

Amplitude Envelope Amplitude (AENV Level)

P3 The Modulation Level Parameter

This Parameter determines the amount of Modulation that will occur. The Value can be positive or negative, from -99 to +99. When the Value is set to 00, no Modulation occurs, and the Parameter is essentially off. When there is no Modulation occurring, the DM Pro indicates this by displaying the Modulation Matrix Function in lowercase letters through all three pages:

```
SND1:mod1 P3
Level: 00
```

Higher absolute Values (positive or negative) increase the amount of Modulation. Logically, negative Modulation Values decrease the Value of the Modulation Destination Parameter, while positive Modulation Values increase the Value.

THE DRUM NAME FUNCTION

As you would expect, this Function simply allows you to name the Drum that you are currently editing. Note that the Name Function covers all four Sounds within a Drum together – individual Sounds within a Drum have no special name other than Sound 1, Sound 2, etc.

To Name a Drum, select the Drum Name Function which is the last Function in Drum Edit Mode. Then move the cursor to the bottom line of the display beneath the current Drum Name which is surrounded in quotation marks:

```
SND1:DRUM NAME
"Doom Tom"
```

Turn the Value encoder to change each character. Using the CURSOR buttons, move the cursor beneath each character you wish to edit, and then again turn the Value encoder to find the character you wish. Drum Names contain up to eight characters which may be in upper or lower case.

```
SND1:DRUM NAME
"Doom Tom"
```

Here is a chart of available Drum Name characters:

		"	#	\$	%	&	'	()	*	+	.	-	/	0	1	2	3	
4	5	6	7	8	9	:	:	<	=	>	?	@	A	B	C	D	E	F	G
H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	[
¥	1	^		`	a	b	c	d	e	f	g	h	i	j	k	l	m	n	o
p	q	r	s	t	u	v	w	x	y	z	{		}						

Remember that the Drum Name is an edit Function like any other. Be sure to save your edited name with the Drum like you would any other edited Function using the Store Command.

CHAPTER 7:

TRIGGERS

This section discusses the DM Pro Trigger Mode, where the 16 Triggers, located on the rear panel, can be used to sound individual Drums and/or convert incoming trigger signals into MIDI data.

To enter or return to Trigger Mode, press [TRIG].

The DM Pro contains four user programmable Trigger Setups where the Values for the Trigger Functions are held. There is no need to store your Trigger Function edits as all four Trigger Setups are perpetually held in memory – any Value that you edit within a Trigger Setup will remain until you edit it again.

The DM Pro contains 12 Trigger Mode Functions:

- Note Assign
- Trigger Gain
- Velocity Curve
- Threshold
- Retrigger
- Crosstalk
- Noise Suppression
- Trigger Setup Select
- Hat Pedal Type
- Hat Threshold
- AUX Pedal Type
- AUX Trigger Gain

Since the TRIG button contains Functions for both Drumkit Mode and Trigger Mode, the Trigger Mode Functions begin on Page 2 of the display. Note that each Trigger Mode Function has only one Parameter and so each Function serendipitously occupies its own page.



As we are discussing the Trigger parameters in this chapter, keep in mind that on Triggers 13, 14, and 16 the Page numbers will be off by one page for each parameter. This is due to the differing number of parameters available for these Triggers. For the sake of clarity, we will be referencing the Page Numbers used by the majority of the Triggers.

P1 THE TRIGGER NOTE ASSIGN FUNCTION

We covered this Function in greater detail in Chapter 4: Programming Drumkits. But it bears repeating here because there are some special cases which you will encounter when selecting the Note Number Assignments for the two Hi-Hat Triggers. As we will be discussing later in this chapter, the Hi-Hat Trigger inputs (Triggers 13 and 14) each have TWO notes to assign. They interact with the Hi-Hat Pedal Input to allow for the Open and Closed positions of a Hi-Hat. So when you are assigning the Note Numbers for Trigger 13, you will see a screen that looks like this:

```
Note Dn: 42 F#1
Drumkit      P1
```

At this point if you move the Value Wheel clockwise one click, the display will change to look like this:

```
Note Up: 46 A#1
Drumkit      P2
```

The same sort of choices can be made for Trigger 14.

P2 THE TRIGGER GAIN FUNCTION

This Function adjusts the level of the incoming trigger signal much like a trim pot on a mixing board. This Function sets the sensitivity of the Trigger input for maximum compatibility for third party drum pads. This Function is also invaluable when using the Triggers with an audio input (e.g., from a tape or hard disk recorder).

To set the Trigger Gain Value, move the cursor beneath the Value and turn the Value encoder:

```
Gain: 40
      | P2
```

The bottom line of the display is a level indicator that shows the gain of the Trigger signal. A vertical bar on the bottom line indicates maximum level. In order to get the most dynamic range out of the Trigger Input, adjust the Gain so that the hardest hits extend to the vertical bar and the softer hits barely move the meter.

Hint: Adjusting the Trigger Gain Value in conjunction with the Threshold Value will allow you to fine tune your Trigger Setup for optimum performance.

P3 THE VELOCITY CURVE FUNCTION

This Function allows you to choose one of the fifteen preset curves to match the DM Pro's Triggers to your playing style and pad output. The default Value is Linear, which has a response to Velocity that most evenly climbs from soft to loud. The various Velocity Curve types are described below. With most pads, these Velocity Curves will allow you to generate MIDI velocities across the full 128-step range.

To choose your desired Velocity Curve, move the cursor beneath the Value and turn the Value encoder:

Vel Curve: Linear

| P3

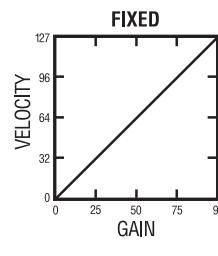
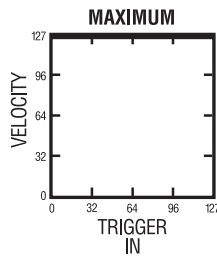
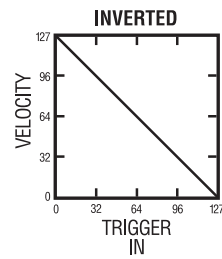
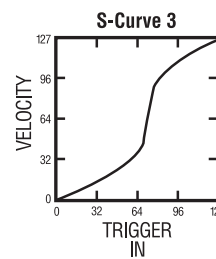
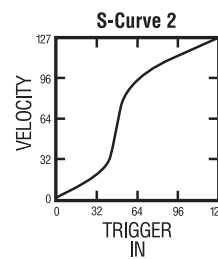
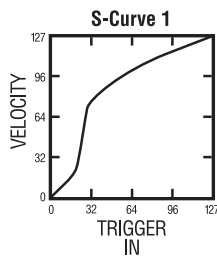
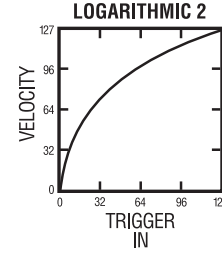
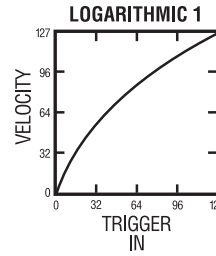
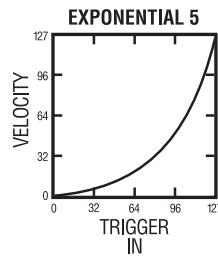
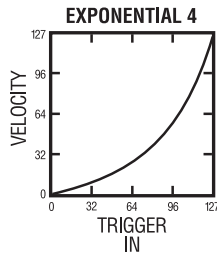
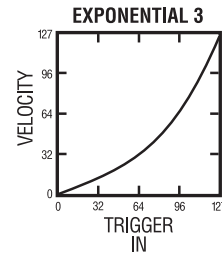
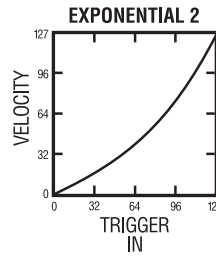
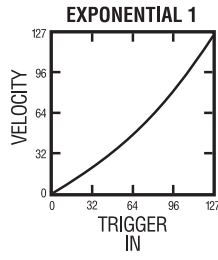
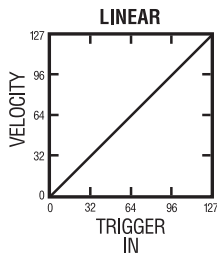
Note that the level indicator remains in the display on this page as well. The level indicator can help you choose which Curve to employ by giving you visual feedback of the Trigger Inputs.

Here is a list of the Velocity Curves available to you:

LINEAR	
EXPONENTIAL 1	less steep, approaching linear response
EXPONENTIAL 2	light/medium steep
EXPONENTIAL 3	medium steep exponential curve
EXPONENTIAL 4	even more steep
EXPONENTIAL 5	steepest curve; hard to get full velocity hits, slow curving up
LOG 1	lightest Logarithmic curve, basically the opposite response of Exp 1
LOG 2	medium sharp log
S-CURVE 1	S-curves for low and high response – not medium - quick transition from low to high
S-CURVE 2	slightly sharper S-curve, quicker transition
S-CURVE 3	quick low to high transition, great for two-velocity drumming
S-CURVE 4	fast transition from low to high; almost no medium response, only low and high response
INVERTED	exact opposite of Linear
MAX	everything played is maximum)
FIXED	everything played is set to the GAIN parameter level; adjust GAIN for the FIXED velocity value. Adjust Threshold for sensitivity

On the next page you will find a series of graphs which represent the response characteristics of each Velocity Curve.

TRIGGER VELOCITY CURVE SETTINGS



Note that the scale on the **FIXED** curve is different from the other curves. On the bottom of the graph it lists "GAIN" instead of "TRIGGER IN," and the scale runs from 0 to 99 instead of 0-127. What this shows is that the output of that Trigger ("Velocity") increases as the "GAIN" is increased from 0 to 99.

P4 THE THRESHOLD FUNCTION

This Function determines the point where a trigger input will be accepted by the DM Pro. The Threshold Value for each Trigger is the lowest point where a Trigger will sound a Drum. In a noisy live environment, this Value should be set higher (try -50 or above: i.e., -40, -30, -20, etc.) to help gate out false trigger messages caused by bass amps or stage monitors. In a quiet studio environment, this Value can be set lower (-60 or below: i.e., -70, -80, etc.) since there will be substantially less interference with the Trigger.

This Function exists on a per-Trigger basis because some Triggers will be more susceptible to noise than others. A rack tom trigger, for example, will tend to pick up much more noise than a kick drum trigger due to its location. Since the kick drum trigger is more isolated, it is less susceptible to noise interference.

Note that the Noise Suppression Function (described below) allows you to filter out false triggering for the whole Trigger Setup, essentially setting the Threshold for each Trigger above the noise floor. Use the Noise Suppression Function in conjunction with the Threshold Function to scale your Triggers for the most dynamic and isolated kit response.

P4 THE HAT THRESHOLD FUNCTION (Triggers 15 and 16 only)

Unlike the Threshold Function for Triggers 1-14, the Hat Threshold Function does not set the velocity point above which the Hi-Hats will be triggered (that is handled on Page 5 for Triggers 13 and 14). What the Hat Threshold Function does is choose the point at which the Hat Pedal will switch between the Note Up and Note Down MIDI Note Number assignments. You'll only notice a change on this parameter if you are using a continuously variable pedal and the Hat Pedal Type Function is set to PEDAL (since a momentary footswitch only has two positions, full On and full Off).

To choose the point in the Hat Pedal's "travel" at which the Hi-Hat will transition from the Note Down and Note Up assignments, move the cursor beneath the Value and turn the Value encoder to toggle the selection:

HatThreshold:-30

| P4

Note also that if you change the value of this Function while on Trigger 15, the Value also will have changed for Trigger 16, and vice-versa. This is because these two Triggers share this Value; it is the dividing line between them.

P5 THE RETRIGGER FUNCTION

This is a tremendously helpful "gating" Function that prevents multiple misfiring of a Trigger Input by setting a minimum time between trigger instances. Because of the sensitive nature of drum pads and external triggers, it is common for one trigger hit to result in 2 or more trigger messages being sent. This can devour polyphony very quickly and cause the performance to sound artificial.

To prevent this multiple triggering from occurring, play the pad or drum trigger as fast as you can and set the Retrigger Function to the maximum Value that will

capture all of your hits. Even a fast press roll is slow by Trigger standards, so set the Retrigger Value accordingly. Use higher Values to increase the time between triggers. To set the Retrigger Value for each Trigger, move the cursor beneath the Value and turn the Value encoder for the desired setting:

Retrigger: 020

| P5

P6 THE CROSSTALK FUNCTION

Sometimes when a pad or drum trigger is struck, it can cause adjacent Triggers to erroneously sound due to vibrations between the pads, drums or even the stand. The Crosstalk Function helps you eliminate a lot of this by setting up a sort of “intelligent gate” that helps prevent one Trigger from receiving false trigger signals from another.

With the Crosstalk Function, you can limit the amount of interaction between Triggers. The Crosstalk Function will help keep an unintended Trigger from sounding while intended Triggers are sounding. It essentially mutes the erroneously sounding Trigger while other Triggers are being played.

Here’s how to set the Crosstalk level for each Trigger:

1. Select the desired Trigger and move the cursor beneath the Value:

Xtalk: OFF

| P6

Watch for the letters RDY (which mean “Ready”) to appear in the display. Once you see them, that’s your cue to proceed to step 2.

2. Hit the pad for the currently selected trigger at full velocity several times (as hard as you would for a very hard hit). Hit only this pad! Don’t hit any other Triggers while you’re on this page.
3. The DM Pro will “listen” to all other Triggers to see what signals they are picking up from the Trigger you are striking. The DM Pro will use these values to generate a “Crosstalk Matrix” (explained below).
4. While hitting the pad hard, adjust the Crosstalk value until no other Triggers are false-triggering (watch the circles at the bottom of the display and/or listen). A Value closer to 0 will filter out more crosstalk. Values approaching -59 filter out less crosstalk.
5. Go to the next Trigger (or just the ones which are causing trouble) and repeat steps 2-4.
6. When you are done, LEAVE THE CROSSTALK PAGE! Do not stay on this page while playing since the DM Pro will continue to listen. If you begin to play your other drums while in the Crosstalk page, you will effectively de-sensitize your setup.

The concept of the Crosstalk Matrix is simple: the crosstalk prevention needed for a Snare Rim when the Snare Center is hit is high (good chance for a false trigger), however the same Snare Rim only requires a small amount of crosstalk prevention when the Floor tom is hit (on the opposite side of the kit).

When you are at the Crosstalk page, after a couple of seconds you will see the letters RDY appear in the display. This means the DM Pro is in a "Listen" mode. When you hit the pad hard (step 2 above), the DM Pro listens to the remaining 13 triggers for a crosstalk level and generates a Crosstalk Matrix of these values. This Matrix, in conjunction with the Crosstalk value you set, will be used to suppress false triggers during normal play.

When you are playing normally, an incoming Trigger will alert all other triggers and supply each with a unique value, which basically tells them "If you just received a signal of this strength, do not sound off!" The Crosstalk Matrix method is a much more complex and reliable way to prevent interactive false triggering per pad while maintaining maximum individual pad sensitivity.

Remember that none of this applies to Triggers 15 and 16 since those are for a Pedal or Footswitch input and are not subject to crosstalk problems.

Important note: The Crosstalk Function is active only if the Noise Suppression Function is set to OFF (see below). If Noise Suppression is set to something between -59 and 0, then the Crosstalk Function is replaced by the Noise Suppression Function.

P7 THE NOISE SUPPRESSION FUNCTION

This Function allows you define the noise floor of your environment for each of the four Trigger Setups by plugging an external trigger or dynamic microphone into the Noise Suppression jack on the rear panel. This Function will dramatically reduce instances of false triggering.

One way the Noise Suppression Function works is by using signals from a Trigger sensor placed directly on the drum rack stand to pick up conducted noise between the drums, and also conducted noise that arrives to the stand from the floor.

By setting the Value of the Noise Suppression Function, you can determine what is an acceptable trigger input level and what is extraneous noise. The closer to 0 the Value gets, the more noise will be suppressed (i.e., a Value of -20 suppresses more noise than a Value of -50). Be aware, though, that too high of a Value will affect the Trigger sensitivity and you will have to hit your pads or external triggers very hard in order to generate a trigger above the defined noise floor.

Here's how to set the Noise Suppression level for the Trigger Setup:

1. Move the cursor beneath the Value:

NoiseSup:-50

Trigger Set ^{P7}

Watch for the letters RDY (which mean "Ready") to appear in the display. Once you see them, that's your cue to proceed to step 2.

2. Hit the frame of the drum rack hard several times. Strike only the

frame! Do not strike any regular Triggers during this adjustment.

3. The DM Pro will “listen” to all 14 pads and the Noise Suppression sensor to see what signals they are picking up as you strike the frame.
4. While hitting the frame in several places, adjust the Noise Suppression value until no Triggers are false-triggering (watch the circles at the bottom of the display and/or listen). A Value closer to 0 will filter out more noise. Values approaching -59 filter out less noise.

Remember that the Noise Suppression Value is for the entire Trigger Setup and not per Trigger.



Important note: If Noise Suppression is set to OFF, then the Crosstalk Function is active. If the Noise Suppression Function is set to something between -59 and 0, then the Crosstalk Function is replaced by the Noise Suppression Function.

P8 THE TRIGGER SETUP SELECT FUNCTION

This Function simply allows you to select one of the four Trigger Setups in the DM Pro. All Trigger Setup Values remain in memory, so there is no need to store your edits. Any changes made to Trigger Setups will remain until changed again.

The idea here is that a busy drummer’s life can be a constant flow between the rehearsal room, a recording studio session, the evening gig at a nightclub, and then back to the rehearsal room. If s/he uses different Pads at one spot or another, or if the requirements of the location mandate a different approach to playing or isolation of the pads, the drummer can optimize the DM Pro for use in four entirely different environments. Setting up the Triggers after that point becomes as simple as plugging in the pads and calling up the proper Trigger Setup.

To summarize, these are the Functions which are stored as a Setup, as opposed to being stored with each Drumkit:

Per Pad	Gain Velocity Curve Threshold Retrigger Crosstalk
Aux/Hat Pedals	Hat Pedal Type Hat Threshold Aux Pedal Type Aux Trigger Gain
All Trigger Inputs (globally)	Noise Suppression

Remember, the Note Number Assignments for each Trigger are stored separately, with the Drumkit.

To choose which of the four Trigger Setups you wish to use, move the cursor beneath the Value and turn the Value encoder for the desired Setup:

Setup Number: 1

Trigger Set ^{P8}



Pages 9 and 10 inside the TRIG function were described in Chapter 4: Programming Drumkits. They are stored on a per-Drumkit basis.

P11 AUX PEDAL TYPE SELECT FUNCTION **P6 HAT PEDAL TYPE SELECT FUNCTION** **(Trigger 15 only)**

These two Functions are somewhat hidden in the DM Pro architecture.

The Hat Pedal Type Function is accessible only when Trigger 15 is selected. When Trigger 15 is selected, you will find this Function on Page 6 of Trigger Mode.

Because the Hi-hat Triggers have additional Parameters for the Pedal Down and Pedal Up positions, the Aux Pedal Type Function is accessed on different Pages for these Triggers. For Triggers 1 - 12 and 15, you will find the Aux Pedal Type Function on Page 11 of Trigger Mode. For Triggers 13 - 14, you will find this Function on Page 12. For Trigger 16, you will find it on Page 10.

Both the Hat Pedal and the Aux Pedal Type Functions have two settings: Switch or Pedal. In both cases, the Pedal Value is for use with a continuously variable (CV) controller pedal such as a volume pedal which will send 128 different values depending on its position (although each input jack uses a different type of CV pedal; see Appendix B "Advanced Trigger Information").

However, in the case of the Switch Value you will need to plug different types of devices into each input jack. For the Hat Pedal, a Value of Switch is for use with a traditional synthesizer sustain pedal, which has only two states (on and off). For the AUX Pedal, a Value of Switch is for use with a "rim switch" -type trigger pad, which simply sends one "message": a trigger impulse. This can be used to support the "cymbal mute" function of certain types of pads (again, see Appendix B). The rim switch on these pads can also be assigned a MIDI Note Number so as to trigger a separate sound, if so desired. This feature is covered a couple of pages ahead in the section called "AUX Trigger Note Select Function."

To choose which Hat Pedal or AUX Pedal Type you wish to use, move the cursor beneath the Value and turn the Value encoder to toggle the selection:

Hat Pedal:Switch

| P6

The significance of the two pedal types is discussed in the next section.

THE INTERACTIVE HI-HAT PERFORMANCE

An acoustic hi-hat is a complex device. To reproduce not only the sound, but also the performance of a hi-hat with an electronic drum module requires some advanced operation. Fortunately, the DM Pro has been designed with Hi-hat performance in mind, and there is a special section of the software that has been specifically crafted to handle the task.

First, here are some “acoustic drum” definitions which will be helpful in discussing the DM Pro Hi-hat operations:

Closed Hi-hat	When the hats are pressed together, usually with the pedal down, striking the upper hat generates this sound.
Open Hi-hat	When the hats are lifted apart, usually with the pedal up, striking the upper hat generates this sound which will ring until closed by the pedal.
Foot Down Hi-hat	The hats get pressed together by the pedal after ringing while open. No stick hit is involved.
Foot Up Hi-hat	The hats are lifted apart creating a ringing sound from the two hats scraping against each other. Again, no stick hit is involved.

Triggers 13 - 16 are optimized specifically for Hi-hat performance. Triggers 13 and 14 are designed to accept a TRS (tip-ring-sleeve) stereo electronic drum pad input, and Triggers 15 and 16 are meant to have a pedal plugged into their jack (except as previously noted for Trigger 16 in the section called “AUX Pedal Type Select Function”). These Triggers interact with each other to create a complete Hi-hat performance, and this interaction is slightly different depending on the Value set by the Hat Pedal Type (further described below).

Following are the recommended Drum assignments for Triggers 13 - 16:

Trigger 13	Hi-hat center, open (Pedal/Note Up) and closed (Pedal/Note Down)
Trigger 14	Hi-hat edge, open (Pedal/Note Up) and closed (Pedal/Note Down)
Trigger 15	Hi-hat Foot Pedal Down
Trigger 16	Hi-hat Foot Pedal Up

HAT PEDAL TYPE: SWITCH

With the Hat Pedal Type set to Switch, the Hi-hat will behave in the following manner:

Depending on the state of the Switch, Trigger 13 will either sound a Closed Hi-hat Drum or an Open Hi-hat Drum. If the Switch is depressed (“closed” or “on”), Trigger 13 will sound a Closed Hi-hat Drum. If the Switch is released, (“open” or “off”), Trigger 13 will sound an Open Hi-hat Drum. To this end, the Trigger Note Assign Function (Drumkit Mode) for Triggers 13 and 14 has two pages – one for each state of the Switch – unlike any of the other Triggers.

Trigger 14 behaves exactly the same as Trigger 13. Trigger 13 is designed to sound a “center” Hi-Hat timbre, and Trigger 14 is designed to sound an “edge” Hi-hat

Triggers

timbre. Use a two-zone drum pad or two separate pads to trigger both of these variable timbres for maximum Hi-hat expressiveness and authenticity.

At the moment the Switch is depressed (stepped on), Trigger 15 will sound a Drum of its own. Trigger 15 is intended to have a "Foot Down" Hi-hat assigned to it. With this Drum assigned, when the Open Hi-hat is ringing, stepping on the Switch will both mute the Open Hi-hat Drum and sound the Foot Down Hi-hat Drum, generating a convincing overall Hi-hat effect.

If you step on the Hat Pedal and then let it up again right away, Trigger 16 will also trigger a Drum. It is intended to have a "Pedal Up" Hi-hat assigned to it for extra realism. This simulates the sound made by a set of Hi-hat cymbals scraping together when you release the Hi-hat pedal. To further aid the realism, the velocity of the "Pedal Up" sound will diminish over time. So the longer you keep the Hat Pedal down, the softer the "Pedal Up" sound will be. If you hold the Pedal down long enough, the "Pedal Up" sound will not be triggered at all. The length of time it takes for the "Pedal Up" sound Trigger to decay to nothing is determined by the Retrigger Function on Page 5 of Trigger 16.

Triggers 15 and 16 derive their velocity from the last signal the DM Pro received from either Trigger 13 or 14. This is important to know, because if the Hat Pedal Type is set to Switch when you first turn on the DM Pro, Triggers 15 and 16 will make no sound until they have received a velocity value from one of those two Triggers. In other words, you can stomp on the Hat Pedal all you want but it won't give you the "Foot Pedal Down/Up" sounds unless you first strike the Hi-Hat pad to give Triggers 15 and 16 a reference velocity value. If the Hat Pedal Type is set to Pedal, Triggers 15 and 16 are assigned a velocity value based on the velocity of the CV Pedal.

HAT PEDAL TYPE: PEDAL

With the Hat Pedal Type set to Pedal, the DM Pro behaves the same as when the Hat Pedal Type is set to Switch, but with some additional features. Triggers 15 and 16 still sound their respective "Foot Down" and "Foot Up" Hi-hat sounds when the Pedal is opened and closed. But to make the performance as dynamic and realistic as possible, the DM Pro tracks the velocity of the Pedal when moving down or up and then sends that velocity value along with the respective Trigger commands.

Remember also that the Hat Threshold Function (Page 4 on Triggers 15 and 16) determines the point at which the Hat Pedal switches from the "Foot Down" to the "Foot Up" Hi-hat sound. This will not only affect the response of these two sounds but also the crossover point of the open and closed "Stick-hit" sounds.

The DM Pro tracks the position of the CV Pedal and can use the Pedal's position as an input to the Modulation Matrix (discussed in "Chapter 6: Programming Drums"). The Sound Designers at Alesis have taken advantage of this to create Hi-hats which open gradually from closed to full open, for even more realistic Hi-hat performance. To find the Drums which support the CV Pedal, select from the Open Hats in the Hat category inside Drumkit Edit Mode (see "Chapter 4: Programming Drumkits" for more information). Look for the word "Open" in the Hi-Hat name. Drumkits 00-51 all support this functionality on MIDI Note Numbers 46 and 95.

To assign the above recommended Drums to Triggers 13 - 16, use the Trigger Note Assign Function which is described at the beginning of this chapter and in "Chapter 4: Programming Drumkits".

P12 THE AUX TRIGGER NOTE SELECT FUNCTION (per Drumkit)

This Function allows you to set the MIDI Note Number for the Aux Pedal Input. It is available only when the Aux Pedal Type is set to Switch. The default Value is Off. Note that the MIDI Note Number you choose is stored with each Drumkit, not with one of the four Setups.

To set the Aux Note Value, move the cursor beneath the Value and turn the Value encoder:

AUX Note: 0ff
Drumkit P12

P13 THE AUX TRIGGER GAIN FUNCTION (per Setup)

This Function adjusts the level of the incoming trigger signal for the Aux Pedal Input. It is available only when the Aux Pedal Type is set to Switch. Note that the Value you choose for Gain is stored with one of the four Setups, not with each Drumkit.

To set the Aux Trigger Gain Value, move the cursor beneath the Value and turn the Value encoder:

AUX Trig Gain: 40
| P13

The bottom line of the display is a level indicator that shows the gain of the Trigger signal. A vertical bar on the bottom line indicates maximum level. In order to get the most dynamic range out of the Trigger Input, adjust the Gain so that the hardest hits extend to the vertical bar and the softer hits barely move the meter.

TIPS FOR TRIGGERING FROM ACOUSTIC DRUMS

When triggering from an acoustic drum, that is using a contact pick up (transducer) mounted to the head or shell, the same general set-up procedures and parameter principles of triggering from pads apply. However, due to extreme head vibrations and resonance of acoustic drums, keeping the “factors” under control is considerably more difficult. These tips should help you in eliminating potential problems.

There are several things to consider when purchasing transducers (triggers), and when mounting them to your drums.

OUTPUT SENSITIVITY

The difference in output levels between transducers is considerable. While a really “hot” trigger might work great on the snare, it may not work as well on a bass drum. For example, a high sensitivity trigger will detect the softer “grace” notes on a snare drum and provide the best tracking in a tight pressed roll. On a bass drum however, because that same trigger is so sensitive, it may be overdriven due to the sheer velocity of each impact from the beater on the head. Overdriving the trigger can allow it to detect every slight vibration as you hit the bass drum. This results in double triggering and contributes to cross talk problems. It can also reduce the life of the trigger itself.

When considering trigger output sensitivity towards applications, generally these tips will apply:

- ① Use “hotter” triggers for shell mounting. Sensitive triggers can detect signals through the shell more accurately than others.
- ② For direct head mounting use less sensitive triggers. When possible use a trigger that contains a built-in sensitivity adjustment. There are several types available.

MOUNTING

One of the most important aspects of triggering is mounting. For any trigger to work properly it must be correctly mounted to the drum. Always use some type of a foam tape, and make certain the trigger is firmly mounted with little or no movement. In addition to forming a solid foundation for the trigger, the foam tape also acts as a shock absorber which helps to deter double triggering. Most of the trigger manufacturers supply several pieces of mounting tape with their trigger products. It is also very important to be certain that no part of the trigger wire, which connects the trigger to the audio jack, is touching or resting on any part of the drum or rim. This wire is sensitive enough to trigger signals from the drum vibrations which would then cause double triggering.

TRIGGER PLACEMENT

Placement is another very important part of triggering performance, but unfortunately there is no right or wrong set of rules. It simply takes a lot of experimentation to arrive at the correct combination for the type and size of drum, and the drum kit configuration you are using. These tips will help you get started with a step in the right direction.

KICK DRUM

- ① Mount the trigger directly on the impact head.
- ② Place the trigger approximately 2-4 inches in from the rim, and level with the beater.
- ③ Slightly reduce the sensitivity of the trigger if it has an adjustment.

SNARE DRUM

If you play with a fairly tight batter head, try this:

- ① Mount the trigger on the batter head.
- ② Place the trigger approximately one inch from the rim, on the opposite side of the drum from the player.
- ③ Slightly reduce the sensitivity of the trigger if it has an adjustment.

If you play with a looser head, try this:

- ① Firmly mount the trigger to the shell approximately one-half inch from the batter rim.
- ② Placement of the trigger should be on the player's side of the drum, within a lug or two of where the stick would hit if you played a rimshot.
- ③ Use a high sensitivity setting if the trigger has an adjustment.

SMALL TOMS 8" - 13"

With smaller toms it is possible to get proper tracking using either head or shell mounting. You will need to experiment with both to determine which will work best in your situation.

For head mounting:

- ① Mount the trigger so that it is within one and one-half inch from the batter rim.
- ② Placement of the trigger should be on the player's side of the drum, within a lug or two of where the stick would hit if you played a rimshot. (In some cases the opposite side of the drum, directly across from the player may work well.)
- ③ Slightly reduce the sensitivity of the trigger if it has an adjustment.

For shell mounting:

- ① Firmly mount the trigger to the shell so that it is approximately one inch from the batter rim.
- ② Placement of the trigger should be on the player's side of the drum, within a lug or two of where the stick would hit if you played a rimshot.
- ③ Use a mid to high sensitivity setting if the trigger has an adjustment.

LARGE TOMS 14" - 18"

In most cases shell mounting will work the best. However, you might experiment with head mounting and find great results.

- ① Firmly mount the trigger to the shell so that it is approximately one inch from the batter rim.
- ② Placement of the trigger should be near the side you sit, within a lug or two of where your stick would hit if you played a rimshot.
- ③ Use a mid to high sensitivity setting if the trigger has an adjustment.

Note: In most cases when shell mounting triggers, internal permanent mounting will provide the best results. This permanent form of mounting allows the trigger to be more firmly attached to the shell, which tends to improve the performance. However, when using this technique it is usually necessary to install an audio jack into the drum shell to connect the audio cable to the trigger.

MUFFLING

Another important part of triggering from acoustic drums is the degree of muffling you apply to your drums. The amount a head vibrates when it is struck is what causes most of the problems related to triggering from an acoustic drum. Often most drummers don't want to put a lot of tape or muffling on their heads, but the degree of improvement it makes may be well worth at least a little sacrifice. A slight amount of muffling can make a huge improvement in any triggering unit's ability to properly track your playing.

MOUNTING HARDWARE AND CONFIGURATION

The quality and sturdiness of your hardware will make a big difference in eliminating potential problems. When you use unsteady hardware, it is an open invitation to crosstalk problems. Toms that are mounted on the bass drum, and drums which share a stand with other instruments such as cymbals, are areas where you should be sure your hardware and mountings are solid and sturdy. Always check to be certain that none of your stands or drums are leaning up against, or touching any other drums or piece of hardware. To sum it up, the more heavy-duty your hardware is, the better.

GLOBAL FUNCTIONS

The DM Pro contains several Global Functions that affect the module as a whole and are independent of the three Programming Modes. There are two types of Global Functions: the Global MIDI Function and the Global Store Function.

THE GLOBAL MIDI FUNCTION

There are two types of MIDI Functions: the Drumkit MIDI Function and the Global MIDI Function. This passage will explain the Global MIDI Function. For information on the Drumkit MIDI Function, see “Chapter 4: Programming Drumkits”.

Access the Global MIDI Function by pressing [MIDI]. Note that the Global MIDI Function is accessed with the same button as the Drumkit MIDI Function, but the Global MIDI Function’s Parameters are denoted by the term Global Edit on the bottom line of the LCD, while the Drumkit MIDI Function’s Parameters are denoted by the current MIDI Note being shown on the bottom line.

The DM Pro Global MIDI Function has twelve Parameters:

- Basic MIDI Channel
- Filter Program Receive
- Filter Program Transmit
- Controller A-D Assign
- Aux Pedal Controller Assign
- Aux Pedal MIDI Channel
- Hat Pedal Controller Assign
- Hat Pedal MIDI Channel
- Local On/Off
- MIDI Start On/Off

P1 The BASIC MIDI CHANNEL Parameter

This Parameter sets the Basic Channel to which Drums and Drumkits will respond and on which Triggers will transmit. Note that the DM Pro cannot be set to MIDI Omni Mode as this would create a confusing situation with the DM Pro’s multichannel, multitimbral capabilities.

Individual DM Pro Drums will respond to the Basic MIDI Channel unless their MIDI Channel assignments are overridden with the Drum Channel Override Parameter within the Drumkit MIDI Function (see “Chapter 4: Programming Drumkits”).

To set the Basic MIDI Channel, press [MIDI] and then move the cursor beneath the Parameter Value, using the Value encoder to make your selection:

Basic Channel: Q 1

Global Edit ^{P1}

P2 The FILTER PROGRAM RECEIVE Parameter

The DM Pro will change Drumkits remotely by responding to MIDI Program Change Commands received via the unit's [MIDI IN]. This Parameter allows you filter out (ignore) these incoming MIDI Program Change Commands so you will not accidentally lose your edits or have your module be changed to an undesired Drumkit.

To disable reception of MIDI Program Change Commands, set this Parameter Value to OFF. To enable the DM Pro to receive and respond to MIDI Program Change Commands, set this Parameter Value to ON.

A Note about MIDI Program Change Reception
Drumkits

Since there are 64 "Programs" (Drumkits) in the DM Pro (00 through 63) and MIDI allows for 128 Program numbers (00 through 127), the DM Pro will "wrap" – start over at Drumkit 00 when MIDI Patch Number 64 is received.

Drums

Any Drum within a Drumkit which has its Drum Channel Override parameter set to something other than BASIC can respond to both MIDI Program Change and Bank Select messages (as MIDI Continuous Controller 0). Each Drum Group has 128 Drums, so the Program Change response range is 0-127. Bank Select messages of 0 will call up the User Drum Group, followed by a Bank Select message of 1 calling up the Acoustic Kick Drum Group and so on up to Bank 12 (for 13 Drum Category banks, total).

P3 The FILTER PROGRAM TRANSMIT Parameter

Similarly to the Filter Program Receive Parameter, the DM Pro will also send MIDI Program Change Commands to cause external devices connected to the [MIDI OUT] of the DM Pro to change their program when a new DM Pro Drumkit is selected from the front panel.

To disable transmission of MIDI Program Change Commands, set this Parameter Value to OFF. To enable the DM Pro to transmit MIDI Program Change Commands, set this Parameter Value to ON.

P4 - P7 The CONTROLLER A-D ASSIGN Parameters

The DM Pro has four "assignable" controllers (Controllers A - D) that can be used in the Modulation Matrix of individual Drums (see "Chapter 6: Programming Drums" for information on the Modulation Matrix). These Assignable Controllers are each, in turn, assigned to a MIDI Continuous Controller Number that allows external devices to modulate or control many of the Parameters in the DM Pro.

These four Parameters assign a MIDI Continuous Controller Number to each of the DM Pro's Assignable Controllers. To assign a MIDI Controller Number to each of the DM Pro's Assignable Controllers, move the cursor beneath the MIDI Controller Number and turn the Value encoder to select your desired choice:

Controller A: 012

Global Edit ^{P4}

Remember that there are four Parameters for the Assignable Controllers, one Parameter for each Controller.

P8 The AUX PEDAL CONTROLLER ASSIGN Parameter

Like the Assignable Controllers described above, the Aux Pedal can be assigned to a MIDI Continuous Controller. However, unlike the Assignable Controllers, the Aux Pedal can transmit as well respond to these MIDI Controller commands. The Aux Pedal itself can transmit the MIDI Controller, and Values set to be modulated by the Aux Pedal Parameter will respond to the same MIDI Controller to which you assign the Aux Pedal. You can, for instance, use the Modulation Wheel on an external synthesizer to act as the Aux Pedal – the DM Pro will not know the difference and will respond identically.

To assign the Aux Pedal to a MIDI Continuous Controller Number, move the cursor beneath the MIDI Controller Number and turn the Value encoder to select your desired choice:

```
Aux Ped Ctl#:016  
Global Edit P8
```

P9 The AUX PEDAL MIDI CHANNEL Parameter

Once the Aux Pedal is assigned to a MIDI Continuous Controller, it must also be assigned to a particular MIDI Channel on which to send and receive. Since there is only one Aux Pedal, the DM Pro would not know what to do with MIDI Aux Pedal Controller messages sent in on multiple MIDI Channels. To simulate Aux Pedal movement via MIDI, the DM Pro asks you to choose one MIDI Channel for the Aux Pedal MIDI Continuous Controller.

To set the Aux Pedal Controller to a particular MIDI Channel, move the cursor beneath the MIDI Channel Value and turn the Value encoder to make your selection:

```
Aux Ped Chan:02  
Global Edit P9
```

Note that one available Value is BASIC. This Value sets the Aux Pedal to transmit and receive its Controller data on the Basic MIDI Channel (described above).

P10 The HAT PEDAL CONTROLLER ASSIGN Parameter

Like the Aux Pedal Controller Assign Parameter described above, the Hat Pedal can also be assigned to a MIDI Continuous Controller. Also like the Aux Pedal Controller, the Hat Pedal can transmit as well respond to these MIDI Controller commands. The Hat Pedal itself can transmit the MIDI Controller, and Values set to be modulated by the Hat Pedal Parameter will respond to the same MIDI Controller to which you assign the Hat Pedal. You can, for instance, use the Modulation Wheel on an external synthesizer to act as the Hat Pedal – the DM Pro will not know the difference and will respond identically.

To assign the Hat Pedal to a MIDI Continuous Controller Number, move the cursor beneath the MIDI Controller Number and turn the Value encoder to select your desired choice:

```
Hat Ped Ctl#:017  
Global Edit P10
```


P11 The HAT PEDAL MIDI CHANNEL Parameter

Like the Aux Pedal, once the Hat Pedal is assigned to a MIDI Continuous Controller, it must also be assigned to a particular MIDI Channel on which to send and receive. To simulate Hat Pedal movement via MIDI, the DM Pro asks you to choose one MIDI Channel for the Hat Pedal MIDI Continuous Controller.

To set the Hat Pedal Controller to a particular MIDI Channel, move the cursor beneath the MIDI Channel Value and turn the Value encoder to make your selection:

Hat Ped Chan:02

Global Edit ^{P11}

Note that like the Aux Pedal, one available Value is BASIC. This Value sets the Hat Pedal to transmit and receive its Controller data on the Basic MIDI Channel (described above).

P12 The LOCAL ON/OFF Parameter

This Parameter determines whether or not the DM Pro's Triggers will play the internal Drums in the DM Pro, or just send MIDI messages via the unit's [MIDI OUT]. This Parameter is essential when recording MIDI data into a computer or other sequencer that has a "MIDI Echo" Function. A computer's MIDI Echo Function takes incoming data received on its [MIDI IN] port and plays it out of its [MIDI OUT] port into a sound module or sound modules. Since the DM Pro is both a controller and a sound module, in this situation you will want to turn Local control off so that the Triggers are only sending MIDI data out, and the internal Drum Voices are only being played by [MIDI IN] data.

To turn Local On or Off, move the cursor beneath the current Value and turn the Value encoder to toggle between On and Off:

Local Contrl:ON

Global Edit ^{P12}

P13 The MIDI SEQUENCE START ON/OFF Parameter

This Parameter globally enables or disables the transmission of MIDI Sequence Start commands from any of the DM Pro's Triggers. Set the Value to OFF to disable the transmission of these messages.

THE GLOBAL STORE FUNCTION

This Function primarily allows you to save your edits in either Drumkit Mode or Drum Edit Mode, but it also contains numerous Commands to copy parts of your work and to transmit individual DM Pro components over MIDI. It also has some utility Commands which allow you to reload Factory Drumkits and Trigger Setups from the DM Pro's memory.

The Global Store Function contains 14 Commands:

Save Drumkit / Save Drum
Copy Sound
Copy Effect
Copy Kit Trig
Initialize Sound
Send All Data to MIDI
Transmit Drum to MIDI
Transmit Drumkit to MIDI
Transmit Trigger Setups to MIDI
Save User Bank to Card
Load User Bank from Card
Load User from Factory (Restore)
Load Factory Drumkit to Edit Buffer
Load Trigger Setups from Factory (Restore)

The SAVE DRUMKIT/SAVE DRUM Command

This Command allows you to store an edited Drum or Drumkit into one of the User memory locations. The Mode in which you are working will determine which of these Commands is available to you.

To Save the current Drumkit, press [KIT] to be certain that you are Drumkit Mode. To Save the current Drum, first press [DRUM] and then press [EDIT] to be certain that are in Drum Edit Mode.

Once you are in the appropriate Edit Mode, press [STORE] to enter the Global Store Function.

If you are Drumkit Mode, the display will read:

```
Save Drumkit to:
USER   _00
```

If you are Drum Mode, the display will read:

```
Save Drum to:
USER   _000
```

Move the cursor beneath the location number to which you wish to save your edit and then press [STORE] again.



WARNING! Storing a Drum or Drumkit will overwrite the current

occupant of the selected memory location, so be certain that you are not erasing something that is valuable to you. If you'd hate to lose it, make sure it has been backed up!

If you have a memory card inserted, you can also choose to save individual Drums and Drumkits to the memory card instead of to the User Bank. Memory cards can contain multiple banks. To save your Drum or Drumkit to a memory card, move the cursor beneath the Bank name and turn the Value encoder:

Save Drum to:

Card1 000

A DM Pro rewritable Bank is structured the same way whether it is the Internal Bank (User) or a Card Bank (Card). All rewritable DM Pro Banks consist of 128 Drums and 64 Drumkits.

The COPY SOUND Command

The Copy Sound Command is a Drum Edit Mode utility that allows you to Copy the Parameter Values of one Sound in Drum Edit Mode into the Parameter Values of another Sound, essentially creating a duplicate of that Sound into a second location.

Once in the Global Store Function, press [CURSOR>] to advance to the Copy Sound Command.

You can select both the source and the destination Sound with complete flexibility. To use the Copy Command, press [CURSOR>] until the display reads COPY SOUND ... and then set your desired Copy sources and destinations by moving the cursor beneath each Value and setting it with the Value encoder:

COPY SOUND 1 TO
SOUND 2 (STR)

Once you have made your selection, press [STORE] to initiate the Copy.

Note that you can also copy the Sound from a Drum other than the current Drum into one of the current Drum's Sounds by adjusting the Value for the Copy source. The following example copies Sound 2 from Drum 015 in the User bank into Sound 2 of the Drum in the Edit buffer:

COPY PROG015 TO
SOUND 2 (STR)



CAUTION! This Command will overwrite the destination Sound in the edit buffer and erase all of its previous Parameter Values. Be certain of your destination before initiating the Copy Command.

Note that within a Drum, the Copy Command only makes changes to the edit buffer of a Sound and does not overwrite the Drum. You must Store the edited Drum in order to preserve your changes. However, when copying Sounds between Drums, the change is automatically stored.

The COPY EFFECT Command

The Copy Effect Command is a Drumkit utility that allows you to Copy the Parameter Values of one Drumkit's Effect into another Drumkit.

Like the Copy Sound Command, once in the Global Store Function, press [CURSOR>] to advance to the Copy Effect Command.

Move the cursor beneath the Drumkit number to which you wish to copy the current Drumkit's Effect:

```
COPY EFFECT TO  
KIT 000 (STR)
```

Note that you can also copy the Effect of a Drumkit other than the current Drumkit into the current Drumkit's Effect by adjusting the Value for the Copy source:

```
COPY KIT 005 TO  
EFFECT (STR)
```

Once you have made your selection, press [STORE] to initiate the Copy.

The INITIALIZE SOUND Command

This Command allows you to initialize all Parameter Values of an individual Sound within a DM Pro Drum to their default Values.

To initialize a Sound, select the Sound you wish to initialize by moving the cursor beneath the Sound Value:

```
INITIALIZE  
SOUND 1 (STR)
```

Once you have selected the Sound you wish to initialize, press [STORE] to complete the Command.



CAUTION! Initializing a Sound will erase all edits you may have made to that Sound. Use this Command carefully.

The COPY KIT TRIG Command

With this Command you can copy the entire set of Trigger/MIDI Note Number assignments from the Edit buffer to any of the 64 Drumkits, or from any of the 64 Drumkits into the Edit buffer.

Note that this is not related to the Trigger Setups.

To copy the Drumkit's Trigger assignments, move the cursor to the desired location on either the top line or the bottom line of the display. Then use the VALUE wheel to select your target and/or destination Drumkits:

```
COPY KIT TRIG TO
```

KIT 00 (STR)

Press STORE to execute the operation.

The SEND ALL DATA TO MIDI Command

This Command will transmit the complete contents of the DM Pro User Bank out of the [MIDI OUT] on the DM Pro. This Command is essential for use with data storage devices that do not send a dump request message, or to copy the User Bank from one DM Pro into the User bank of another DM Pro.

To execute this Command, make sure that the receiving device is ready to receive a bulk dump, and then press [STORE] to initiate the transfer.

The TRANSMIT DRUM TO MIDI Command

Like the Send All Data to MIDI Command, this Command allows you to send the Parameter Values of the selected Drum out of the [MIDI OUT] on the DM Pro to an external data storage device or a second DM Pro.

You can transmit the current Drum or any other Drum in the DM Pro User Bank. To transmit the current Drum, set the source Value to match the MIDI Note of the Drum that have selected. For example, if you have selected the Drum assigned to MIDI Note 60, set the source accordingly:

```
MIDI DRUM Ed60 TO
DRM Ed60? (STR)
```

This setting will cause the Drum currently assigned to MIDI Note 60 to be sent via MIDI to a location of MIDI Note 60 in the receiving unit. You can also set the destination to a note other than that of the source unit, thereby rearranging the Drumkit as you desire:

```
MIDI DRUM Ed60 TO
DRM Ed10? (STR)
```

If the source or destination Values are preceded by Ed, then the Drum will be sent to, or received from, the current “edit buffer” of a Drumkit and not the stored Drumkit. The edit buffer is the area of memory that holds the currently edited Values. The DM Pro has 64 Drum edit buffers, meaning that it can hold edited Values for up to 64 Drums simultaneously. Note that the Drum edit buffers are cleared when a new Drumkit is loaded, erasing all edited Values.

If the source or destination Values are NOT preceded by Ed, then the Drum will be sent to, or received from, a stored location – not the current edit buffer. Use this setting carefully as initiating the Command will overwrite the current occupant of the destination memory location.

The TRANSMIT DRUMKIT TO MIDI Command

Like the Transmit Drum to MIDI Command, this Command transmits an entire Drumkit via MIDI to an external source or second DM Pro. You may select your source and destination from any of the 64 User Drumkits as well as the Drumkit edit buffer:

```
MIDI KIT EDIT TO
KIT 10? (STR)
```

Again, press [STORE] to initiate the transmission.

The TRANSMIT TRIGGER SETUPS TO MIDI Command

This command is just like the Transmit Drumkit to MIDI Command, except that it transmits all four of the Trigger Setups via MIDI to an external source or second DM Pro. Since the four Trigger Setups are stored in memory at all times, there is no Trigger Setup edit buffer. You must send all four Trigger Setups at once. There are no variables Values for this Command – either do it or don't:

SEND TRIG DATA
TO MIDI? (STR)

Press [STORE] to initiate the transmission.

The SAVE USER BANK TO CARD Command

This Command allows you to store the entire contents of a DM Pro User Bank onto a PCMCIA Type I or Type II SRAM memory card. Depending on the size of the card, there may be more than one Card Bank available as a location for which to save your User Bank. Use the Value encoder to choose the Card Bank to which you wish to save your User Bank:

Save USER to
CardBnk1 (STR)

Press [STORE] to save the Bank.



CAUTION! This Command will overwrite the contents of the current Card Bank location – be certain that this Card Bank is available before pressing the [STORE] button.

The LOAD USER BANK FROM CARD Command

The flipside of Save User Bank to Card, this Command allows you to load the entire contents of a DM Pro User Bank from a PCMCIA memory card into the User bank of your DM Pro. Depending on the size of the card, there may be more than one Card Bank available as a location from which to load into your User Bank. Use the Value encoder to choose the Card Bank from which you wish to load your User Bank:

Load USER from
CardBnk1 (STR)



CAUTION! This Command will completely replace the entire contents of your User Bank (all 4 Trigger Setups, all 64 Drumkits and the 128 User Drums) with the contents of the Card Bank, and therefore utterly and irrevocably destroy anything that you have in your current User Bank. Make sure that your current User Bank is either backed up or totally disposable before initiating this Command.

Press [STORE] to load the Card Bank into the User Bank.

The LOAD USER FROM FACTORY (RESTORE) Command

This Command allows you to restore the DM Pro User Bank to its factory settings. This includes the 4 Trigger Setups, 64 User Drumkits and all 128 User Drums. This is a fairly drastic measure as it will obliterate any edits you may have made to your DM Pro. Be absolutely certain that this is what you really, really want to do before initiating the Command.

To restore the factory User Bank, press [< CURSOR >] until you reach this page:

Load USER from
Factory? (STR)

and then press . . . wait . . . are you sure? . . . okay, then press [STORE].

The LOAD FACTORY DRUMKIT TO EDIT BUFFER Command

This Command allows you to load a single Factory Drumkit into the Edit buffer. This is handy in the event you accidentally overwrite one of the original Drumkits which you really liked. It loads the Drumkit you select into that temporary area where your Drum and/or Drumkit edits reside until you store them.



WARNING! This procedure will wipe out any edits you have made which you have not stored.

To reload a factory Drumkit, press [STORE] once and then [< CURSOR] until you reach this page:

Load FactoryKit00
to EDIT? (STR)

Use the VALUE wheel to select a Drumkit number between 00 and 63. Press [STORE] to load the chosen Drumkit into the Edit Buffer.

The LOAD TRIGGER SETUPS FROM FACTORY (RESTORE) Command

Re-initializing the DM Pro does not erase your Trigger Setups, for obvious reasons. But since you might want to initialize them someday, Alesis has included a feature which does this. This Command enables you to set all of the Trigger functions back to the factory defaults.



WARNING! This procedure will erase all of your Trigger Setups. Any Trigger Function which is not stored with a Drumkit will be lost (Gain settings, Velocity Curves, Crosstalk, etc.). If you think you might want your existing Trigger Setups back someday, back them up to MIDI with the Global Store Mode function SEND TRIG DATA TO MIDI.

To restore the factory Trigger Setups, press [STORE] once and then [< CURSOR] until you reach this page:

Load TRIGS from
Factory? (STR)

Press [STORE] to load the factory-default Trigger Setups back into place.

A WORD ABOUT THE INCLUDED CD-ROM

Included with the DM Pro is a CD-ROM containing various useful software programs to use with your DM Pro and other Alesis MIDI products. These include various Alesis and third-party programs, samples, sequences stored in the MIDI Song File (SMF) format, plus demonstration software we thought you would find interesting. Most of these programs are provided in both Macintosh™ and IBM® PC formats.

SOUND BRIDGE™

Among the files contained on the CD-ROM is a software program called Sound Bridge™. Sound Bridge is a sound development utility which you can use to compile custom samples from a variety of sources into the DM Pro Voice format, and then download the compiled data to an Alesis PCMCIA Flash RAM Sound Card via MIDI SysEx to a DM Pro Drum Module. Sound Bridge allows individuals and sound developers to make their own Sound Cards, using whatever samples they want. Sound Bridge makes this possible without having a PCMCIA card burner attached to your computer. All you need is a DM Pro.

Sound Bridge creates a DM Pro Voice by allowing you to load in single sound files in a variety of formats and sample playback rates. Sound Bridge will keep track of the root notes, sample start points, loop points, and loop tunings of the sound file. Sound Bridge can also create DM Pro Voices by loading Digidesign Sample Cell™ I or Sample Cell™ II format Instrument files. Using this format, Sound Bridge is able additionally to determine velocity group split points and keep track of tunings in the various "key groups" of the instrument. When you call up such a "chromatic" instrument as a Drum and alter its pitch with the Tune Function, the DM Pro will automatically switch to the next key group (sample) at the appropriate time.

Sound Bridge does NOT require Sample Cell™ hardware. The Sample Cell Instrument file, or sample file, may be loaded directly into Sound Bridge from any disk (i.e. your QS CD-ROM, floppy disk, hard disk, etc.). For example, a user may load data from a Sample Cell-compatible CD-ROM and then send this data to the DM Pro's PCMCIA Card without using Sample Cell in between.

NOTE: If you are interested in creating and/or editing your own custom Sample Cell Instruments, you will need Digidesign's Sample Cell™ hardware and software.

Sound Bridge also allows you to burn sequences to the SRAM or Flash RAM card you place in the DM Pro's front-panel expansion slot. These are sent over as a part of the Sound Bridge project, along with any samples and a Drumkit bank. For more information on how to access the sequences once you've burned them to the card, see the section called "Playing Back a Sequence from the Card Slot" on the next page.

The Sound Bridge folder on the CD-ROM contains the Sound Bridge application and an electronic manual which will give you all the information you need to know to run Sound Bridge.

USING PCMCIA EXPANSION CARDS

The DM Pro provides a PCMCIA EXPANSION CARD slot, located on the front panel. It will accommodate Alesis QCards and RAM cards. The RAM Card is a type of PCMCIA SRAM or Flash RAM card. We currently offer one which has 512K of memory and will store 8 complete banks. Larger Flash RAM cards can store up to 8MB of sample data using Alesis Sound Bridge software.

The QCards are ROM cards, which stands for Read-Only Memory. This means that you can't store ("Write") to them. So the kind of card you need to use for that sort of operation is an SRAM or Flash RAM card.



The cards must be Type 1 PC cards (PCMCIA), and must be either AMD-C series or -D series FLASH cards (or fully compatible). Any SRAM card should work. Many different card sizes from 256K to 8 Megabytes are supported; just make sure they are 5-volt read/write only, and have an access time of 150 nanoseconds or faster.

USING ALESIS QCARD EXPANSION CARDS

Included on the CD-ROM are two extra banks for the DM Pro. These banks were created to allow instant access to the wealth of samples on two of our most popular 8-megabyte QCard Expansion cards, the Z1 Hip Hop QCard and the Z2 Eurodance QCard. These two QCards are heavily populated with great drum loops and samples, as well as tons of synth, keyboard and other samples, making them the ideal partners for the DM Pro.

All other QCards are compatible with the DM Pro as well, but you will have to create your own custom Drums which access the samples on those cards.

PLAYING BACK A SEQUENCE FROM THE CARD SLOT

As mentioned before, Sound Bridge allows you to burn your own sequence files to an SRAM or Flash RAM card in the DM Pro's expansion card slot (up to 50 of them!). Once you've done this, here is how to access your sequences from the front panel of the DM Pro:

1. Press and hold the [KIT] button.
2. While still holding the [KIT] button, press the [CURSOR >] button. You will see a screen that looks like this:

Play Card Seq00
<STORE>

3. Using the VALUE wheel, select a number between 00 and 49.
4. Press [STORE]. The screen will indicate that the DM Pro is playing the sequence you selected. You can stop the sequence at any time by pressing the [KIT] button.

5. Flashing circles around the numbers at the bottom of the display indicate sequence playback activity on the various MIDI Channels.

TROUBLESHOOTING

If you experience problems while operating your DM Pro, please use the following table to locate possible causes and solutions before contacting Alesis customer service for assistance.

Symptom	Cause	Solution
The display does not light up when the ON/OFF switch is turned on.	No power.	Check that the power cable is plugged in properly.
No sound.	Bad connections.	Check your audio cables; if necessary, swap cables.
	Volume is turned down.	Raise the [VOLUME] knob.
Effects are noisy.	Effects send too low, return too high.	Turn output of effect device up and reduce Aux Return level on mixer. Increase Aux Send levels.

CHECKING THE SOFTWARE VERSION

To check the software version of your DM Pro, press [KIT] and then hold down both sides of the [< CURSOR >] button. A screen like this will be displayed until you let go of the button:

DMPPro v1.00

Trg Ver. 1.00

REINITIALIZING THE DM PRO

Very rarely, you may encounter a situation where the DM Pro (or any product ever made) will “freeze up”, or stop functioning normally. In the unlikely event that this occurs, there are a couple of things you can do.

First, try simply turning the DM Pro off and then on again. This is definitely the first thing to try if you were editing a Drumkit or Drum and hadn’t stored it to the User bank before the unit “froze.” Chances are that your previous edits will still be there when you power the unit back on. Once you have, store whatever you were working on and then re-initialize anyway, just to make sure there’s no bad data lurking about somewhere.

If turning the DM Pro off and then back on doesn’t clear up the problem, there’s a slightly stronger option available. But be aware that any edits you were working on

which you hadn't stored WILL BE ERASED when you perform a "re-init."
Here's what to do:

1. Turn the DM Pro off.
2. Hold down the [< CURSOR] and [CURSOR >] buttons. (Once you get the hang of this, you can just press the middle of the [< CURSOR >] button with one finger.)
3. Turn the DM Pro back on.
4. Let go of the [<CURSOR >] button after a couple of seconds .

You'll know the DM Pro has been re-initialized if the display looks like this:



The nice thing is that for all its power, a re-initialization of the DM Pro does not affect the User bank of Drumkits and Drums at all. Even nicer is the fact that it doesn't touch the Trigger Setups, which would be very time-consuming to reconstruct. Keep in mind that it's a good idea to back these things up to a MIDI storage device from time to time. Any time you've reached the point where you would hate to lose the work you've done, back it up!

MAINTENANCE/SERVICE

CLEANING YOUR DM PRO

Before doing cleaning of any kind, always disconnect the AC cord.

For simple dusting and removal of minor dirt, wipe the instrument down with a slightly-damp cloth.

For heavy dirt, use a non-abrasive household cleaner such as Formula 409 or Fantastik. Spray the cleanser onto a cloth, then use the cloth to clean the unit.

NEVER spray any cleaner directly onto the DM Pro — this can destroy the lubricants used in the switches and controls!

PREVENTATIVE MAINTENANCE

- Periodically check the AC cord for signs of fraying or damage.
- Make sure the entire bottom surface of the keyboard is supported, so the rest of the unit is not subjected to unnecessary bending.
- Keep the DM Pro in places which are not dusty.

REFER ALL SERVICING TO ALESIS

The DM Pro is one of the most reliable drum modules that can be made using current technology, and should provide years of trouble-free use. If problems should occur, however, Do NOT attempt to service the unit yourself. THIS WOULD BE DANGEROUS, thanks to high-level AC and DC electrical voltages present in the instrument's chassis.

Service on this product should be performed only by qualified technicians. THERE ARE NO USER-SERVICEABLE PARTS INSIDE.

OBTAINING REPAIR SERVICE

Before contacting Alesis, please double-check all your audio and MIDI connections, and make sure you've read the manual.

U.S. Customers:

If the problem persists, call Alesis USA at 1-800-525-3747 (1-800-5ALESIS) and request the Product Support department. Or you can e-mail Product Support at Support@alesis1.usa.com. Discuss the problem with one of our technicians; if necessary, you will be given a repair order (RO) number and instructions on how to return the unit. All units must be shipped prepaid and COD shipments will not be accepted.

For prompt service, indicate the RO number on the shipping label. If you do not have the original packing materials, ship the DM Pro in a sturdy carton, with shock-absorbing materials surrounding the unit. Bubble-pack works well, as will any Styrofoam pellets that don't contain CFCs. **PROPER PACKAGING IS IMPORTANT:** Shipping damage caused by inadequate packing is not covered by the Alesis warranty.

Before sealing the box, tape a note containing the following items to the top of the defective unit:

- A description of the problem.
- Your name.
- Your phone number (and e-mail, if you have it).
- The address where you want the product returned. (Alesis will pay for standard one-way return shipping on any warranty repairs. Next day service is available for a surcharge.)

Field repairs are not normally authorized during the warranty period, and repair attempts by unqualified personnel may invalidate the warranty.

Service address for customers in the USA:

Alesis Service Department
12520 Wilkie Ave.
Hawthorne, CA 90250

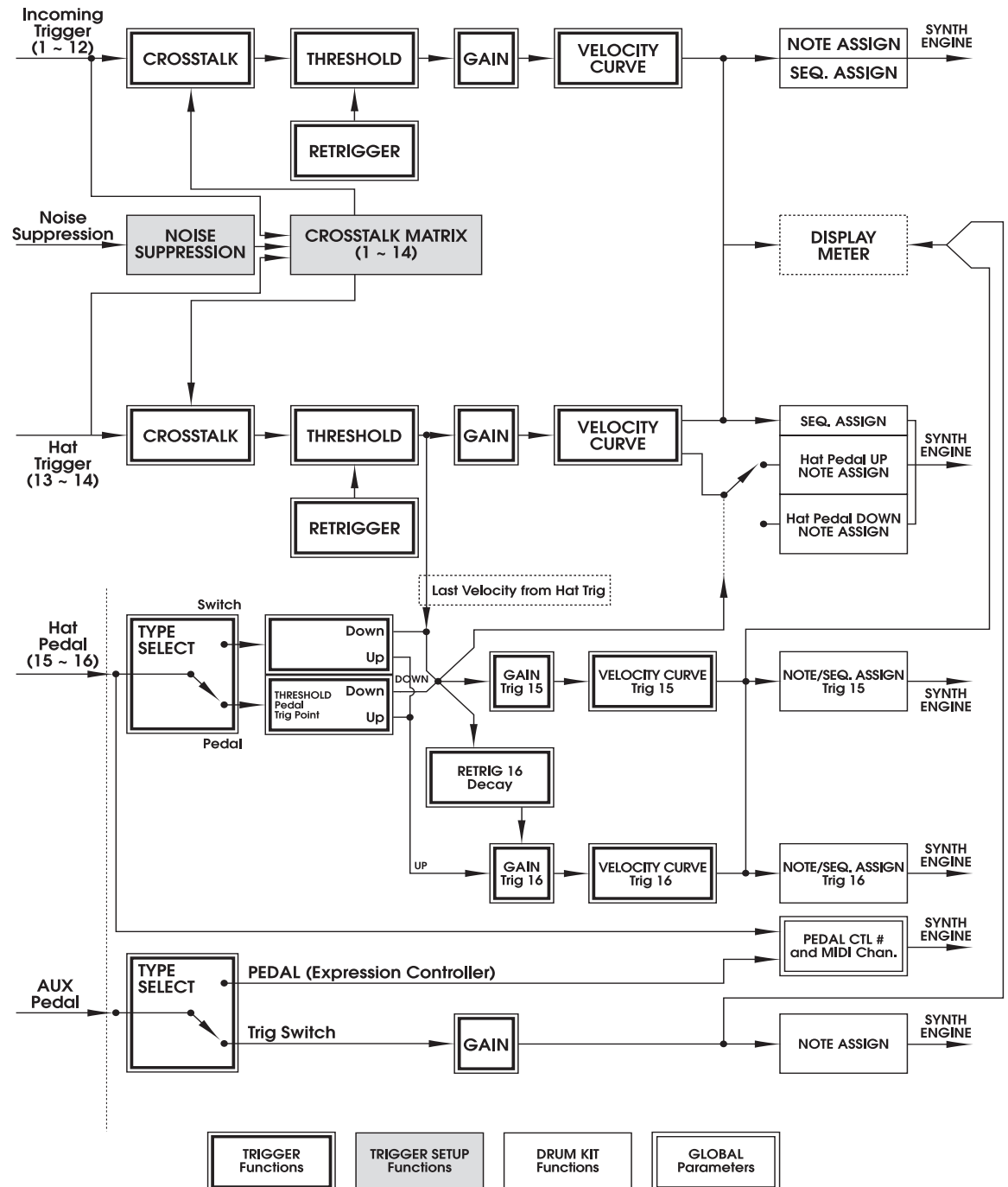
Customers outside the USA:

Contact your local Alesis dealer for warranty assistance. The Alesis Limited Warranty applies only to products sold to users in the USA and Canada. Customers outside of the USA and Canada are not covered by this Limited Warranty and may or may not be covered by an independent distributor warranty in the country of sale. Do not return products to the factory unless you have been given specific instructions to do so.

ADVANCED TRIGGER INFORMATION

THE DM PRO TRIGGER PROCESS

Here is a diagram which shows exactly how the DM Pro's Trigger section works:

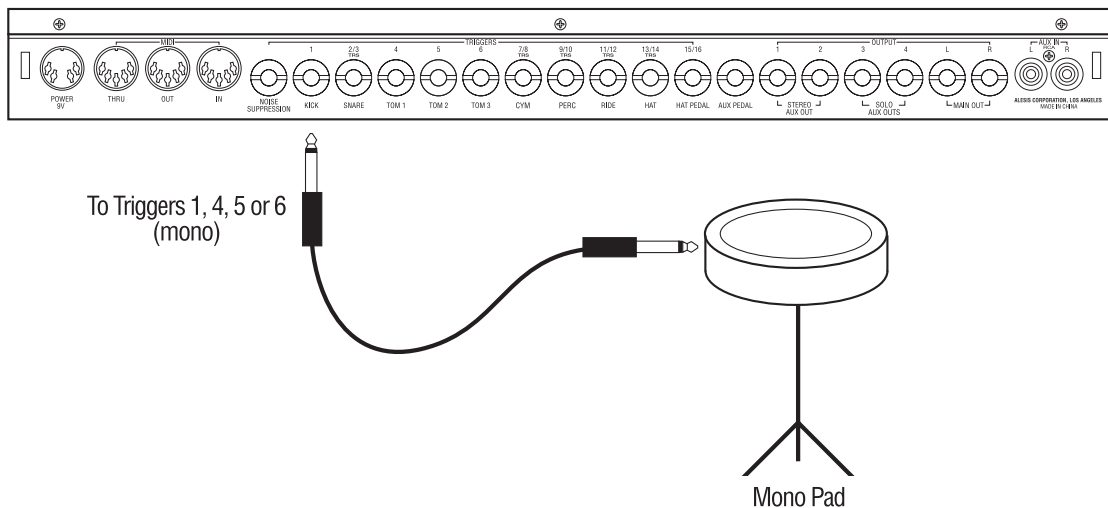


As you can see, the Trigger section of the DM Pro is a very intricate and powerful portion of its software. One clue in reading the diagram is to notice the “color keys” along the bottom of the chart. The box labeled “TRIG Functions” has a darker-line box inside a thinner-line box. You’ll notice there are many boxes in the diagram with a similar design. When you see this sort of outline around a box, that means the Function listed inside that box is a Trigger Function, and is stored with the Trigger Setup (not with the Drumkit). Crosstalk is one example of a Trigger Function. The same thing applies to the other color keys: find a similarly outlined or colored box and that will define for you how it fits into the scheme of things.

TRIGGER CONNECTION DIAGRAMS

Here are some examples of the most common uses for the Trigger section of the DM Pro. In all cases, use high-quality shielded cables! They’re worth the extra money because they will keep the signals going into your Trigger inputs as clean as possible.

Mono pad to mono Trigger input on the DM Pro

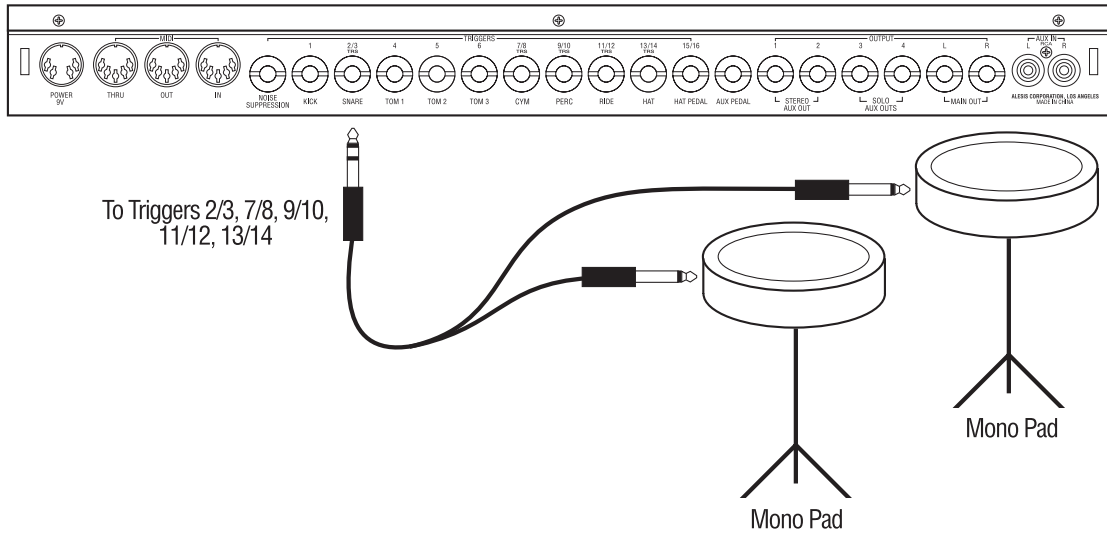


Single-trigger or “mono” pads are meant to be plugged into Trigger Inputs 1, 4, 5, and/or 6. You can plug them into the TRS Trigger Inputs if you want, but you’ll be wasting a Trigger. If you’re triggering the DM Pro from a multi-track tape deck, substitute the audio signal from the tape deck for the “Mono Pad” in the diagram.



It is not a good idea to use a double-TRS cable with a mono pad when you’re plugging into a TRS jack on the back of the DM Pro. If you do, an electrical phenomenon called “capacitive coupling” will cause that mono pad to simultaneously trigger BOTH Trigger inputs on the DM Pro. Use a standard “mono” cable if you want to use a mono pad with one of the DM Pro’s TRS inputs.

Two mono pads to TRS Trigger input on the DM Pro

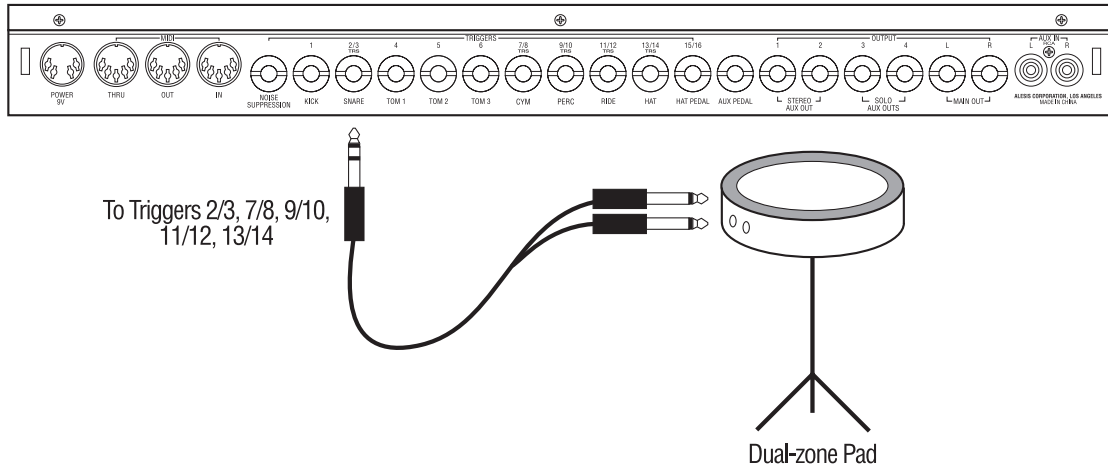


You can use two separate pads or trigger sources to trigger two different Drums via the TRS Trigger Input jacks on the back of the DM Pro. Generally, in the DM Pro’s preset Drumkits the TRS Trigger Inputs are used for grouping similar percussion instruments. Triggers 2 and 3, for example, which share the first TRS jack from the left as you’re looking at the rear panel, are set up for a Snare and a Sidestick Snare, respectively. Triggers 13 and 14 are assigned the task of triggering two different sets of Hi-hat Drums (“center” and “edge” hits, respectively). But you can use any Drum on any Trigger, if you like.

The TRS jacks are used to reach Trigger Inputs 2/3, 7/8, 9/10, 11/12, and 13/14.

★ If for some reason it is necessary to leave one of the mono ends of a TRS splitter cable “dangling”, or unplugged, turn the Threshold for its Trigger up to 00 to help prevent false triggering of the Trigger Input which you intend to use.

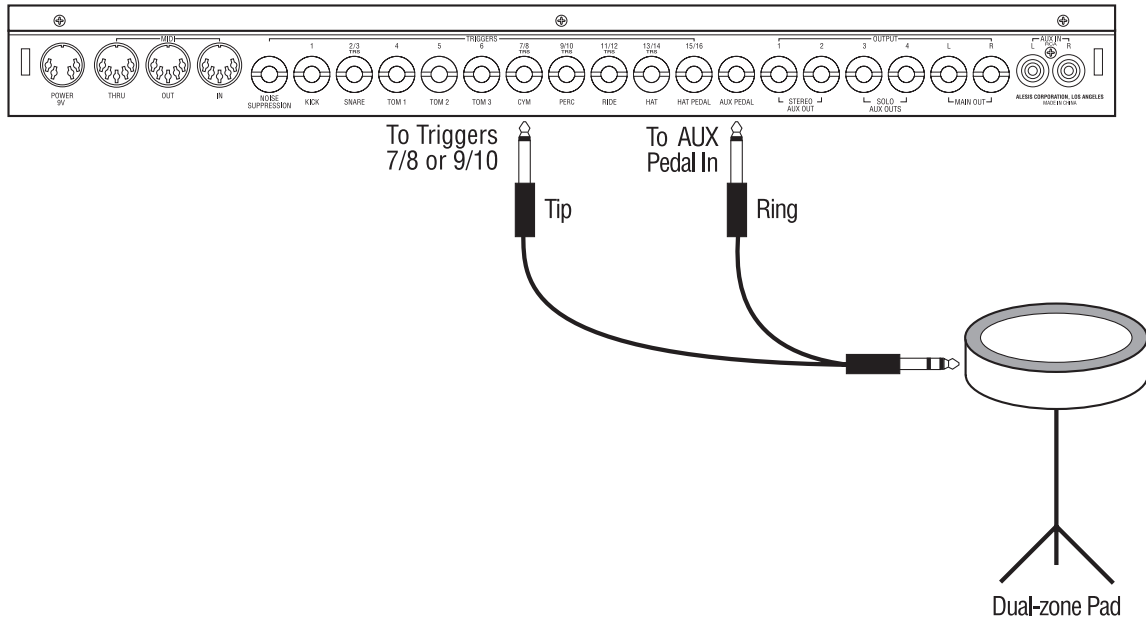
Dual-zone pad to TRS Trigger input on the DM Pro



This is a common way to hook up a pad for a Snare. Many companies sell “dual-zone” pads which will give you the option to assign one Drum to the center of the pad and another to the edge of the pad (typically assigned to Snare and Sidestick sounds, respectively). This type of pad would also be useful for triggering the two Hi-hat Triggers (Triggers 13 and 14). But you can use this sort of pad for any of the TRS Trigger Input jacks.

The TRS jacks are used to reach Trigger Inputs 2/3, 7/8, 9/10, 11/12, and 13/14.

Dual-trigger pad connection for “rimswitch” trigger/Cymbal choking



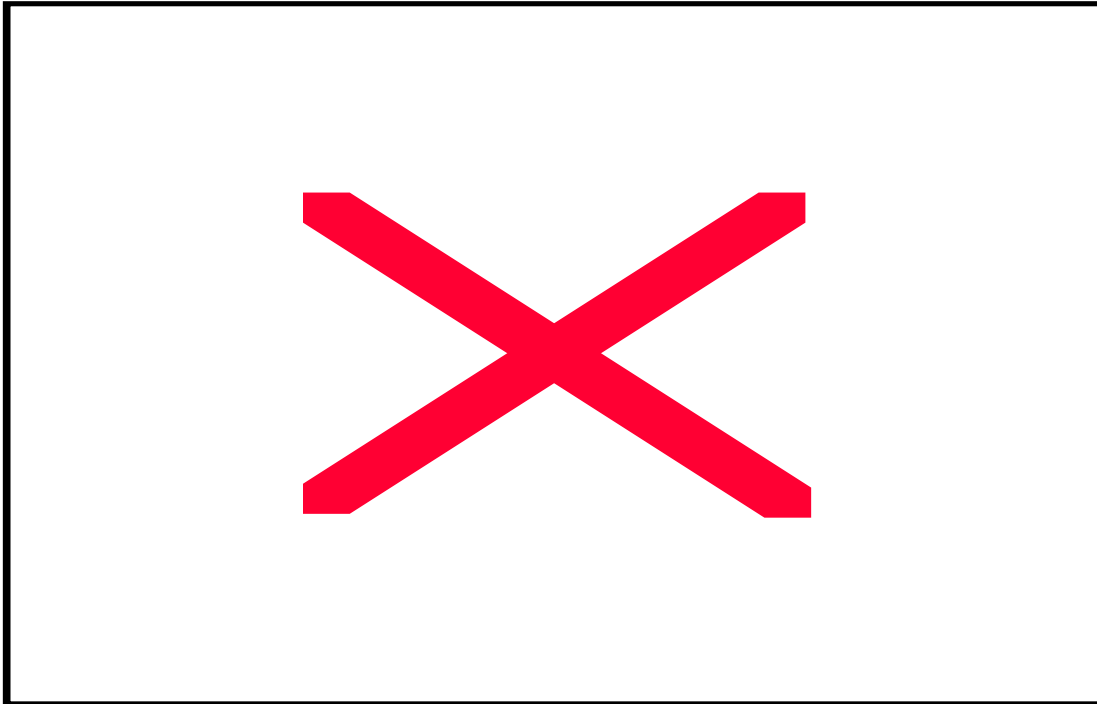
Some companies make pads which have what is known as a “rim switch” trigger. The idea is that it enables the drummer to grab the rim of the pad and “choke” whatever sound is playing (typically a Crash cymbal). Some examples of such a type of pad are the Yamaha PCY80S and the Roland PD-9.

These aren’t really considered “dual-zone” pads because you can’t really “play” the second trigger with a stick. But it is possible to have the rimswitch trigger play a Drum in the DM Pro. Refer to “Chapter 7: Triggers” and look up the paragraph entitled “P12 The AUX TRIGGER NOTE SELECT Function” on page 116 for information on how to do this. Of course, you have to set the AUX Pedal Type to Switch first before the DM Pro will allow you to do any of this. But in effect, the AUX Trigger Input becomes “Trigger 17” when you use it this way.

In order to choke off a Drum with the AUX Pedal Input, both must be assigned to the same Mute Group number. For a description on what this means and how to do it, refer to that section in “Chapter 4: Programming Drumkits.”

Although the typical use of such a pad is for choking off a Cymbal, there are certainly lots of other potential applications. The sky is the limit! Try it for muting Snare rolls, Sound effects, or Drum loops you’ve burned to a Flash RAM card using Sound Bridge.

★ The diagram shows the mono end of the TRS cable which is marked “TIP” being plugged into TRS Trigger Input 7/8. Ideally, a mono pad would be plugged into one of the mono Trigger Input jacks (1, 4, 5, or 6). That way you don’t “lose” a Trigger by plugging a mono plug into a TRS (stereo) jack. But if you want, you can plug the cable in this diagram into any one of the Trigger Inputs from 1 to 14. Once you have, plug the other mono end (the one marked “RING”) into the AUX Pedal Input jack.



This option looks pretty strange, but it's the way to use the AUX Pedal Input for muting Drums or Cymbals with a rimswitch trigger pad and still be able to play two separate pads on TRS Trigger Input jacks 7/8 or 9/10. This involves two different kinds of Stereo Instrument "Y" Cables (sometimes called "TRS splitter cables"): one with two socket or "female" mono 1/4" jacks on the opposite end, and another with the more standard set of "male" mono 1/4" jacks.

Here's how to hook it up. Plug the TRS-to-female cable into one of the TRS Trigger Input jacks (7/8 for this example). Plug the other TRS cable into a dual-trigger pad equipped with a rimswitch trigger. The mono "male" end which is marked "RING" should go into the AUX Pedal Input jack. The other mono end, marked "TIP", should be plugged into the "female" end which is marked "TIP" on the other TRS cable. The other mono "female" socket needs to be plugged into a standard guitar cable (1/4" mono), which itself can then be plugged into the mono pad.

Once hooked up correctly, the center of the rimswitch pad should be triggering the Cymbal assigned to Trigger 7 and the mono pad should be triggering the Cymbal assigned to Trigger 8. Remember, whichever Cymbal you want to be able to "choke" with the rimswitch must be assigned to the same Mute Group number as the rimswitch. And of course, you can assign all three to the same Mute Group if you wish. For a description on what this means and how to do it, refer to that section in "Chapter 4: Programming Drumkits."

PEDAL/FOOTSWITCH COMPATIBILITY

The Continuously Variable (CV) Pedals and Momentary Footswitches which are used must meet certain criteria for optimum performance with the DM Pro. The momentary footswitches should be "normally open." The recommended choice is the Alesis "Sustain Pedal," which is a momentary footswitch that ships with most of our keyboard products. It is available through your Alesis dealer. It also may be obtained directly through Alesis Product Support by calling 1-800-5ALESIS (1-800-525-3747).

There are two different types of CV Pedals needed, depending on which Pedal Input jack you intended to use. For the Hat Pedal Input, the CV Pedal must have a "Hat Down" resistance of less than 100 ohms and a "Hat Up" resistance of greater than 10k ohms. An excellent choice would be the Roland FD-7 pedal. Its response and feel are very similar to that of an actual Hi-hat pedal. Be aware that if you use a different type of CV Pedal, it must be the type where the maximum resistance is reached when the pedal has its heel all the way down. Otherwise, it will appear to work "backwards" when routed through the Mod Matrix.

For the AUX Pedal Input jack, the specifications are different. The pedal you use needs to have a resistance range of between 200 ohms when fully closed to 20k ohms when fully open (all the way forward). The Roland EV-5 pedal is a good choice. Adjust the potentiometer on the side of the pedal for the most effective range from down to up.

TRIGGER/PEDAL CONNECTOR TYPES

Here is a quick-reference guide for the specifications of the various Trigger and Pedal Input jacks of the DM Pro:

INPUT	CONNECTOR TYPE	NOTES
Noise Suppression	1/4" Mono Phone "Tip"	
Trigger 1/Kick	1/4" Mono Phone "Tip"	
Trigger 2	1/4" Stereo Phone "Tip"	
Trigger 3	1/4" Stereo Phone "Ring"	
Trigger 4	1/4" Mono Phone "Tip"	
Trigger 5	1/4" Mono Phone "Tip"	
Trigger 6	1/4" Mono Phone "Tip"	
Trigger 7	1/4" Stereo Phone "Tip"	
Trigger 8	1/4" Stereo Phone "Ring"	
Trigger 9	1/4" Stereo Phone "Tip"	
Trigger 10	1/4" Stereo Phone "Ring"	
Trigger 11	1/4" Stereo Phone "Tip"	
Trigger 12	1/4" Stereo Phone "Ring"	
Trigger 13	1/4" Stereo Phone "Tip"	
Trigger 14	1/4" Stereo Phone "Ring"	
Trigger 15/16 (Hat Pedal)	1/4" Mono Phone "Tip"	"Switch" or "Pedal" Hat Type
AUX Pedal/Rim Trigger	1/4" Mono Phone "Tip"	For "Switch" AUX Pedal Type
	1/4" Stereo Phone	For "Pedal" AUX Pedal Type

Note: EV-5, FD-7, and PD-9 are trademarks of Roland Corporation.
PCY80S is a trademark of Yamaha Corporation.

MIDI SUPPLEMENT

MIDI BASICS

Most current electronic instruments and signal processors, including the DM Pro, contain an internal computer. Computers and music have been working together for decades, which is not surprising considering music's mathematical basis (consider frequencies, harmonics, vibrato rates, tunings, etc.). In the mid-70s, microcomputers became inexpensive enough to be built into consumer-priced musical instruments. They were used for everything from sound generation to storing parameters in memory for later recall.

In 1983, the MIDI (Musical Instrument Digital Interface) specification was introduced to better exploit the computers inside these new musical instruments, primarily to ensure compatibility of equipment between manufacturers. MIDI expresses musical events (notes played, vibrato, dynamics, tempo, etc.) as a common "language" consisting of standardized digital data. This data can be understood by MIDI-compatible computers and computer-based musical instruments.

Before electronics, music was expressed exclusively as written symbols. By translating musical parameters into digital data, MIDI can express not only the types of musical events written into sheet music, but other parameters as well (such as amount of pitch bend or degree of vibrato).

MIDI HARDWARE

MIDI-compatible devices usually include both MIDI In and MIDI Out jacks, which terminate in 5-pin DIN-style connectors. The MIDI Out jack transmits MIDI data to another MIDI device. As you play a MIDI controller such as a keyboard, data corresponding to what you play exits the MIDI Out jack. Example: If you play middle C, the MIDI Out transmits a piece of data that says "middle C is down." If you release that key, the MIDI Out transmits another piece of data that says "middle C has been released."

If the keyboard responds to the dynamics of your playing, the note data will include dynamics information too. Moving the modulation wheels and pedals attached to many synthesizers will also generate data associated with those wheels and pedals.

The MIDI In jack receives data from another MIDI device. In addition to the type of performance data described above, rhythmically-oriented MIDI devices (e.g., drum machines) can often transmit and/or receive additional MIDI timing messages that keep other rhythmically-oriented units in a system synchronized with each other.

An optional MIDI Thru jack provides a duplicate of the signal at the MIDI In jack. This is handy if you want to route MIDI data appearing at one device to another device as well.

MIDI MESSAGE BASICS

There are two main types of MIDI messages. Channel messages, which are channel-specific, consist of Voice and Mode messages. System messages, which do not have a channel number and are received by all units in a system, include Common, Real Time, and Exclusive messages.

CHANNEL MESSAGES: MODE MESSAGES

There are two messages that determine the MIDI mode (i.e., how a device will receive MIDI data). The “Omni” message determines how many channels will be recognized. Omni On means that data from all channels will be received; Omni Off limits the number of channels, usually to one.

The “Mono/Poly” message deals with voice assignment within the synthesizer. In Mono mode, only one note at a time plays in response to voice messages; in Poly mode, as many voices can play notes as are available to play notes.

CHANNEL MESSAGES: VOICE MESSAGES

A synthesizer’s voice is the most basic unit of sound generation. Usually, each voice plays one note at a time, so the number of notes you can play at one time will be limited by the available number of voices. MIDI messages that affect voices include:

Note On. Corresponds to a key being pressed down; values range from 000 (lowest note) to 127 (highest note). Middle C is 60.

Note Off. Corresponds to a key being released; values are the same as Note On.

Velocity. Corresponds to dynamics; values range from 001 (minimum velocity) to 127 (maximum velocity). A velocity of 000 is equivalent to a Note Off message.

Pressure. Indicates the pressure applied to a keyboard after pressing a key. Mono pressure (Aftertouch) represents the average amount of pressure applied by all keys. Poly Pressure produces individual pressure messages for each key.

Program Change. Sending a Program Change command from a sequencer or other MIDI keyboard can change synth patches automatically. There are 128 Program Change command numbers.

Also note that not all units number programs consistently. Some number them as 000-127, others as 001-128, and still others arrange programs in banks of 8 programs (such as A1-A8, B1-B8, C1-C8, etc.).

Pitch Bend. This “bends” a note from its standard pitch.

Continuous Controllers. This term is sometimes abbreviated “CC” and is followed by a number sign and a number, as in “CC #7”. If you look at the chart on the next page, you’ll see that “Continuous Controller # 7” controls MIDI (or Main) Volume. (What we mean by “continuous” is “able to go from 0 to 127 in increments of 1”.)

Footpedals, breath controllers, and modulation wheels can vary sounds as you play, thus adding expressiveness. MIDI allows for 64 continuous controllers and 58 continuous/switch controllers (which can act like continuous controllers, but some are assumed to choose between two possible states, such as on/off).

Each type of controller is stamped with its own controller identification number. Not all controller numbers have been standardized for specific functions, but the following indicates the current list of assigned controllers. Numbers in parentheses indicate the controller range.

#	FUNCTION
0	Bank Select (0-127)
1	Modulation Wheel (0-127)
2	Breath Controller (0-127)
3	Early DX7 Aftertouch (0-127)
4	Foot Controller (0-127)
5	Portamento Time (0-127)
6	Data Slider (0-127)
7	Main Volume (0-127)
8	Balance (0-127)
10	Pan (0-127)
11	Expression (0-127)
16	General Purpose #1 (0-127)
17	General Purpose #2 (0-127)
18	General Purpose #3 (0-127)
19	General Purpose #4 (0-127)
32-63	Least Significant Bits (LSB), Controllers 0-31 (0-127)
64	Sustain Pedal (0 or 127)
65	Portamento On/Off (0 or 127)
66	Sostenuto Pedal (0 or 127)
67	Soft Pedal (0 or 127)
69	Hold 2 (0 or 127)
80	General Purpose #5 (0 or 127)
81	General Purpose #6 (0 or 127)
82	General Purpose #7 (0 or 127)
83	General Purpose #8 (0 or 127)
91	Reverb Depth (0-127)
92	Tremolo Depth (0-127)
93	Chorus Depth (0-127)
94	Celeste Depth (0-127)
95	Phase Depth (0-127)
96	Data Increment (0 or 127)
97	Data Decrement (0 or 127)
98	Non-Registered Parameter MSB (0-127)
99	Non-Registered Parameter LSB (0-127)
100	Registered Parameter MSB (0-127)
101	Registered Parameter LSB (0-127)
121	Reset All Controllers (0)
122	Local Control On/Off (0 or 127)
123	All Notes Off (0)
124	Omni Off (0)
125	Omni On (0)
126	Mono On (0-16; 0=Omni Off)
127	Poly On (0)

SYSTEM COMMON MESSAGES

Intended for all units in a system, some of these MIDI messages are:

Song Position Pointer. This indicates how many "MIDI beats" (normally a 16th note) have elapsed since a piece started (up to 16,384 total beats). It is primarily used to allow different sequencers and drum machines to auto-locate to each other so that if you start one sequencer, the other device will automatically jump to the same place in the song, whereupon both continue on together.

System Exclusive. This message (called SysEx for short) is considered "exclusive" because different manufacturers send and receive data over MIDI which is intended only for that manufacturer's equipment. Example: Sending a QS6.1 message to an Alesis DM Pro Drum Module won't do anything, but the message will be understood by another QS6.1. This data often contains information about individual instrument programs.

Timing Clock. A master tempo source (such as a sequencer) emits 24 timing messages (clocks) per quarter note. Each device synchronized to the sequencer advances by 1/24th of a quarter note when it receives the clock message, thus keeping units in sync after they've both started at the same time. Many devices subdivide this clock signal internally for higher resolution (e.g., 96 pulses per quarter note).

Start. Signals all rhythmically-based units when to start playing.

Stop. Signals all rhythmically-based units when to stop playing.

Continue. Unlike a Start command, which re-starts a sequencer or drum machine from the beginning of a song each time it occurs, sending a Continue message after a Stop command will re-start units from where they were when they stopped.

(Portions of this appendix are abridged versions of material from Power Sequencing with Master Tracks Pro/Pro 4 and The Complete Guide to the Alesis HR-16 and MMT-8, copyright 1990 and 1989 respectively by AMSCO Publications, and are adapted with permission.)

MIDI IMPLEMENTATION CHART

Function		Transmitted	Recognized	Remarks
Basic Channel	Default Changed	1 - 16 1 - 16 each	1 - 16 1 - 16 each	Memorized
Mode	Default Messages Altered	Mode 3 X * * * * *	Mode 3 X	
Note Number	True Voice	33-96 * * * * *	33-96 33-96	
Velocity	Note On Note Off	O O	O X	
After Touch	Keys Ch's	X X	X X	
Pitch Bender		X	O	
Control Change	0 - 120	O	O	Transmitted from CV pedals
Prog Change	True #	O ¹ 0 - 127 * * * * *	O ¹ 0 - 127 0 - 127	
System Exclusive		O	O	
System Common	Song Pos Song Sel Tune	X O X	X O X	
System Realtime	Clock Commands	O O	O O	
Aux Messages	Local On/Off All Notes Off Active Sense Reset	X X X X	O O X O	CC #122 CC #123 CC #121
Notes <p style="text-align: center;">¹ O, X is selectable</p>				

Mode 1: OMNI ON, POLY
Mode 1: OMNI ON, MONO

Mode 3: OMNI OFF, POLY
Mode 4: OMNI OFF, MONO

O : Yes
X : No

GLOSSARY OF TERMS

This section briefly defines most of the terms mentioned in the DM Pro Reference Manual. If during your reading of Reference Manual you encounter a term that is unfamiliar, jump to this section for an additional explanation. This section can also be used as a quick, non-linear description of individual aspects of the unit. However, for the most in-depth descriptions, read the specific chapters on the sections with which you are working.

ABSOLUTE VALUE	The value of a real number without regard to sign. An Absolute Value is neither positive nor negative, but rather, “absolute”.
AMPLITUDE	The volume or loudness of a Drum Voice in the DM Pro. Amplitude can be changed (“modulated”) by velocity, envelopes or external controllers.
ARCHITECTURE	The overall arrangement of Modes, Functions and Parameters in the DM Pro as well as the voice layout and signal routing.
BUSS	A path or route that sends a Drum to the Effects Processor or Output of the DM Pro.
CHASE	The Function that allows incoming MIDI Note data to select the current MIDI Note in a Drumkit. The Chase Function is active if [CHASE] is lit.
DRUM	The composite sound, such as a Snare, Kick or Cymbal, that is assigned to a MIDI Note within a Drumkit. A DM Pro Drum is composed of four unique Sounds that can be individually edited in Drum Edit Mode.
DRUM EDIT MODE	One of three Modes and the “bottom level” of the DM Pro. This is where you edit the voice parameters of individual Drums. Each Drum is made up of four voices, each with its own unique parameters. Drum Edit Mode is for advanced operation only, and it is substantially more complex than any of the other modes. To enter Drum Edit Mode, press [EDIT].
DRUM GROUP	An organizational divider designed to help you navigate your way through the many Drums contained in the DM Pro. Drum Groups contain related types of Drums: Acoustic Kicks, Electronic Snares, Hi-hats, and Sound Effects are all examples of Drum Groups. Like Drums, Drum Groups are selected from within Drumkit Mode.
DRUMKIT	A collection of 64 Drums (including their Tuning, Mix and MIDI assignments), 16 Trigger Note Assignments, and all Effects settings (including EQ). There are 64 Drumkits in the DM Pro, all of which may be edited and overwritten by the user.

DRUMKIT MODE	One of three Modes and the “top level” of the DM Pro. Drumkit Mode is where you select individual Drums, change their volumes, their panning, their tuning and their MIDI and output assignments. Drumkit Mode also contains all of the Effects Functions including EQ. To return to Drumkit Mode at any time, press [KIT].
DRY	No effects.
EFFECTS	In the DM Pro, Effects refers to any or all of the DSP Functions contained in the Effects Function, which include Reverb, Overdrive, Delay, Chorus, Flanger, Resonator and EQ.
EFFECTS BUSS	The path or route that sends a Drum into the Effects Processor of the DM Pro. There are two Effects Busses in the DM Pro: a Reverb Buss and a Multi-Effects Buss. The Multi-Effects Buss contains three digital effects: Overdrive, Delay and Pitch (Chorus, Flanger or Resonator). Within a Drumkit, each of the 64 Drums can individually be sent to either the Reverb Buss or the Multi-Effects Buss.
EFFECTS MIX LEVEL	The output volume of an Effects Function such as Reverb, Delay or Pitch. A Drum will sound wet (lots of effects) or dry (no effects) depending on both the Values set for the Effects Mix Level and Effects Send Level. Higher Values will increase the effect.
EFFECTS SEND LEVEL	The amount of Drum signal that is sent through the Effect Buss into the Effects processor. A Drum will sound wet (lots of effects) or dry (no effects) depending on the Values set for the Effects Send Level and Effects Mix Level. Higher Values will increase the effect.
ENVELOPE	A scaleable variation over time that is used to adjust, or modulate the Pitch, Frequency and / or Amplitude of a Drum Voice. There are three Envelopes per Drum Voice in the DM Pro.
ENVELOPE STAGE	One of the six components of a DM Pro Drum Voice Envelope: Delay, Attack, Decay, Sustain, Sustain Decay and Release.
EQ	Equalizer. In the DM Pro, each Drumkit has a master EQ consisting of a high frequency shelf and a low frequency shelf. The EQ is additive only – EQ cannot be cut in the DM Pro. Use the Filter Function to reduce high frequencies.
FILTER	In the DM Pro, a signal processing device that reduces high frequencies by 6dB per octave. Think of it like a variable frequency high shelving EQ on a mixing board that can only cut.

FILTER CUTOFF	The shelving, or corner frequency of the Filter that determines the point at which high frequencies begin to be reduced.
FUNCTION	The organizational term for a part of the DM Pro software that contains a set of related Parameters. For example, the Mix Function contains the Parameters for the level or a Drum, its Pan setting, Output and Effects Buss Assignment and Effects Send Level. A DM Pro Function exists within a Mode. For example, the Mix Function is contained within Drumkit Mode. Function is a subset of Mode. Each Mode contains several Functions, and each Function, in turn, contains several Parameters.
GLOBAL FUNCTIONS	Functions that pertain to the general operation of the unit that are not stored within a Drumkit, Drum or Trigger Setup. For example, "Basic MIDI Channel" is a Global Function.
MIDI	An acronym for Musical Instrument Digital Interface. MIDI is the standard serial communications protocol for music equipment and is typically carried on a 5-pin DIN cable. MIDI allows a controller, such as a keyboard or a computer, to talk to the DM Pro and vice versa.
MIDI NOTE NUMBER	This refers to one of the 64 "locations" or "slots" where Drums reside within a DM Pro Drumkit. All of the MIX and TUNE Parameters refer to MIDI Note Numbers and not to the Drums that reside there.
MODE	The highest level organizational term that refers to one of the three basic operating areas of the DM Pro: Drumkit Mode, Drum Edit Mode and Trigger Mode. Each Mode contains several Functions, and each Function, in turn, contains several Parameters.
MODULATION	Change. Typically thought of as "change over time". In the DM Pro, Modulation generally refers to the realtime automated movement of a Parameter. For example, one setting of AENV Attack Modulation would be where the speed of the envelope attack is modulated, or changed, by velocity; the higher the velocity value (the harder the note is hit), the faster the envelope attack.
MODULATION MATRIX	A Function within Drum Edit Mode that allows you to assign a Source, Destination and Amount to create a custom, non-standard routing that will cause one Function to change another on a unipolar basis. For example, you can program the Modulation Matrix to cause Velocity to shorten the AENV Attack. The Amount Parameter will determine how much the AENV Attack is shortened.
OVERWRITE	The act that stores an edited Drumkit, Drum or Trigger Setup into a memory location, consequently erasing the previous occupant of that memory location.

PAGE	The area that is displayed on the LCD at one particular time. Most DM Pro Functions contains several Pages, each of which contain the Parameters of the Function. When a Function contains multiple Pages, the Page will be denoted in the display with a "P" followed by the Page number (P1, P2, etc.) at the far right of the display, either on the upper or lower line depending on the Function. To change Pages, move the cursor beneath the Parameter name and turn the Value encoder.
PARAMETER	The organizational term for a part of the DM Pro software that conducts a specific task. For example, the Drum Volume Parameter controls the level of a Drum, and the Filter Cutoff Parameter controls the brightness of a Drum Voice. A DM Pro Parameter is contained within a Function. For example, the Drum Volume Parameter is contained within the DM Pro Mix Function, and the Filter Cutoff Parameter is contained within the Filter Function.
PITCH	<ol style="list-style-type: none">(1) As an audio frequency, Pitch is most commonly thought of as a musical note.(2) As an Effects Function, Pitch refers to the group of Functions Chorus, Flanger and Resonator, where the frequency of the incoming signal is modulated to create ensemble, sweeping or metallic timbres.
STORE	The Function that allows you to save your edits, and that also contains the Copy and MIDI Transmit Commands. The Store Function exists within Drumkit Mode and Drum Edit Mode only – there is no Store Function in Trigger Mode.
TRIGGER	The electronic circuitry that converts an incoming voltage signal from a pad or audio source into MIDI data that is used to play a Drum or initiate a Sequence command. The DM Pro has 16 Triggers accessed by 1/4" jacks on the rear panel.
TRIGGER MODE	One of three Modes of the DM Pro. This is where you adjust the parameters for the 16 trigger inputs. Parameters include Trigger Note Assignment, Gain, Threshold, Crosstalk and Sequence Commands. Trigger Mode contains 4 Trigger Setups which are stored independently of Drumkits or Drums. To enter or return to Trigger Mode, press [TRIG].
TRIGGER SETUP	The part of the DM Pro Trigger Mode that contains the Trigger Gain, Threshold and Crosstalk Parameters, but not the Trigger Note Assignment Parameter (the Trigger Note Assignment Parameters are stored with the Drumkit). The DM Pro has 4 Trigger Setups which are stored independently of Drumkits or Drums.
TRS	An abbreviation for "Tip – Ring – Sleeve." This is a type of audio connector sometimes referred to as a "Stereo plug."

TUNE	The Function that alters the Pitch of a Drum in Drumkit Mode.
UNIPOLAR	In one direction only. Modulation Matrix Amounts are unipolar in that they can only Modulate the Destination Parameter one way (up only or down only).
VALUE	The amount, or setting of a Parameter. In the example, "AENV Attack: 32", the number "32" is the Value. In the example, "FX Bus: REVERB", the word "REVERB" is the Value.
VELOCITY	A MIDI Value from 0 - 127 that describes how hard a note is hit. In most cases, Velocity controls the volume of a sound. In the DM Pro, Velocity can also modulate many other parameters such as Filter Frequency or Envelope Stages.
VOICE	<ol style="list-style-type: none">(1) The term for an individual digital sample or multisample such as WoodSnare1, Loop Hat 4, Bead Shake, Vibraphone, Marimba, etc.(2) The basic sample-playback generator used by the DM Pro. The DM-Pro has 64 dynamically-allocated Voices available at any one time for the Sounds within the Drums to use. The number of Sounds layered within each Drum being played directly impacts the number of Voices available for other Drums to utilize. In other words, a single strike of a four-Sound Drum uses four times as many Voices as a one-Sound Drum.
WET	Lots of effects.

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