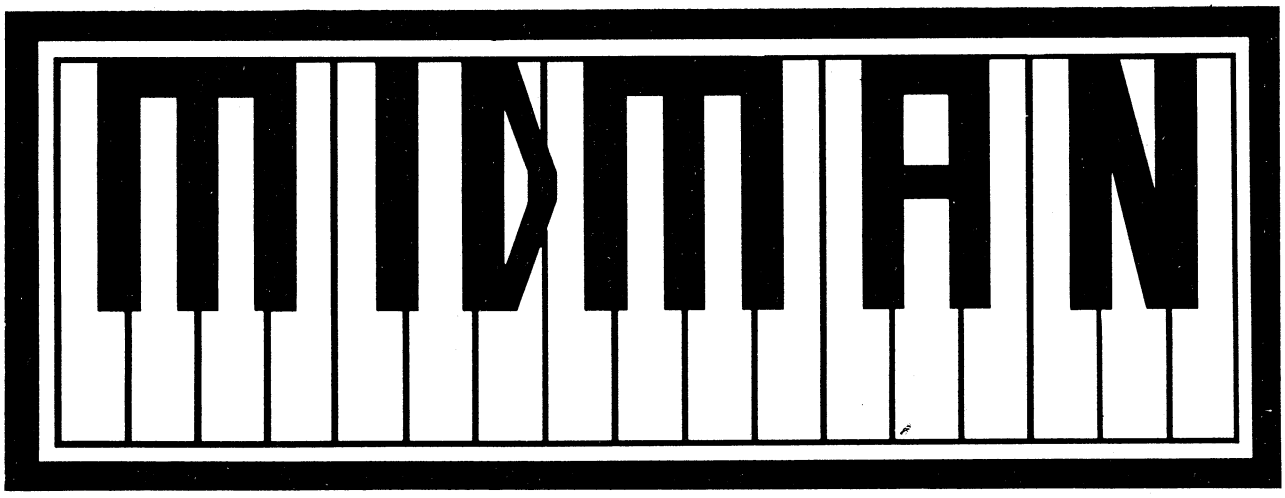
DRAWMER

MIDI

MANAGEMENT SYSTEM M401

OPERATING INSTRUCTIONS



DRAWMER M401 'MIDI' MANAGEMENT SYSTEM (MIDMAN)
INTRODUCTION

It is a well known fact that some MIDI keyboards, sequencers and drum synthesisers, whilst performing very well, suffer from the disadvantage that some of their MIDI data is incompatible with other MIDI devices. The resulting confusion is, at best, time wasting and often catastophic.

The Drawmer 'MIDMAN' is a microprocessor based unit which is designed to overcome these problems by becoming the 'central control unit' from which all the keyboards etc. are controlled. It is suitable for studio or live work and can also be used with MIDI controlled recording desks.

The 'MIDMAN ' is a completely flexible unit which can, amongst many other functions, split keyboards, intercept and change MIDI channels, trigger MIDI notes on and off and generate many types of clock signal. Velocity sensing keyboards may be set to a fixed volume if required.

There are four programmable MIDI output sockets at the rear of the unit, each of which can have one or more synthesisers (or computers/sequences/drum machines) connected. Each output socket has 8 programmable Trigger and Volume patterns of up to 99 beats in length available to it. Using all four sockets enables a total of 32 patterns (8 each) to be called at any time and sent to any MIDI channel along with other control functions. There is one MIDI output socket which will usually be fed from a large sequencer, 'mother keyboard' or even the 'thru' or 'output' socket from another MIDMAN. The data received is then 'filtered' by the MIDMAN, processed and sent to the output sockets according to the front panel settings.

32 patches are available. Each patch contains the settings for the MIDMAN front panel parameters plus any trigger patterns as described above. Once the parameters are set they may be stored in memory for later recall. Internal battery backup ensures storage of data when the unit is switched off. In addition, any work in progress on a particular patch is automatically stored if the unit is switched off. Upon 'switch on' the MIDMAN resumes operation at the same point as when switch off occured thus enabling the operator to continue working. In this way, if all 32 patches are used and one requires modification, it need not be stored in memory until modification is complete; even if the unit is switched off, or power failure occurs.

Other rear panel sockets provide a +5V clock pulse, Trigger and Stop/Start signals. In addition, an audio trigger output provides a signal at 5kHz which is used to trigger non-MIDI equipment e.g. the DRAWMER DS201 Dual noise gate using the external key input or in conjunction with the DRAWMER T102 interface.

MIDI keyboards can have notes triggered on and off by the MIDMAN in several ways, e.g. 'Trig in' signals (either audio or +5V) can trigger notes for a pre-programmed gate time, whilst the clock (either internal, external or external MIDI) can trigger notes at a selection of rates.

Two momentary Footswitches provide useful 'hands off' functions depending on the front panel selections. In normal circumstances, Footswitch 1 is used to hold the notes being played on the keyboard, thus freeing according to the pattern selected.

Footswitch 2 is used to provide alternative functions which are selected by the options in *'PLAY MODE'*.

In addition, Footswitch 1 can be made to start the internal/external clock by selecting *'START FS'*.

When *'PATCH NUM'* is selected and the unit is stopped, Footswitch 1 steps down the patch numbers whilst Footswitch 2 steps up.

FRONT PANEL SELECTIONS.

The front panel is arranged so as to provide 10 selection boxes, each having 4 options (40 functions in all). To select a box, press the *SCAN* key. Each section LED will flash in a chasing sequence until the required box of four options is chosen by pressing the key in that box. Then by pressing *OPTION* key, each of the four options within the selected block is available for edit (shown by the LED pointing to the correct row of options). Once a block has been chosen, the function of the 10 selection keys take on other tasks, shown by the arrows or commands to the right of each key.

Each complete set of parameters together with any pre-recorded rhythm patterns is referred to as a 'patch'. Changing the values does not store the 'patch' in memory until the *'WRITE PATCH'* command is selected. However, as already stated, the MIDMAN will remember the current settings even when switched off.

A MIDI input data error will cause  to be displayed. Should any odd effects occur after an error, switch off the unit for a few seconds. Upon 'switch on' the MIDMAN will reset to the correct previous status, but will not reset any parameters.

All of the functions are preset at the factory. To completely reset the MIDMAN to factory settings, push both *'SCAN'* and *'OPTION'* keys and keep them pressed while the unit is switched on. The display will show  If *'YES'* is now pressed, ALL the stored patches will be ERASED (12 'pips' will be heard from the internal bleeper to signify reset in progress and  will be displayed in a flashing mode). Pressing any other key will display the Software Version number, and will abort the reset. Because of the serious nature of this process, it has been made difficult to accomplish.

Upon 'switch on' if the front window does not show any display and the mains switch indicator is not lit then the rear panel mains fuse has blown. Replace only with a fuse of the same rating. On the contrary, if the mains indicator is lit but the display and at least two LEDs are not illuminated then the internal fuse has blown. Do not attempt to replace this without consulting your DRAWMER dealer. Failiure to follow this instruction may damage the unit permanently.

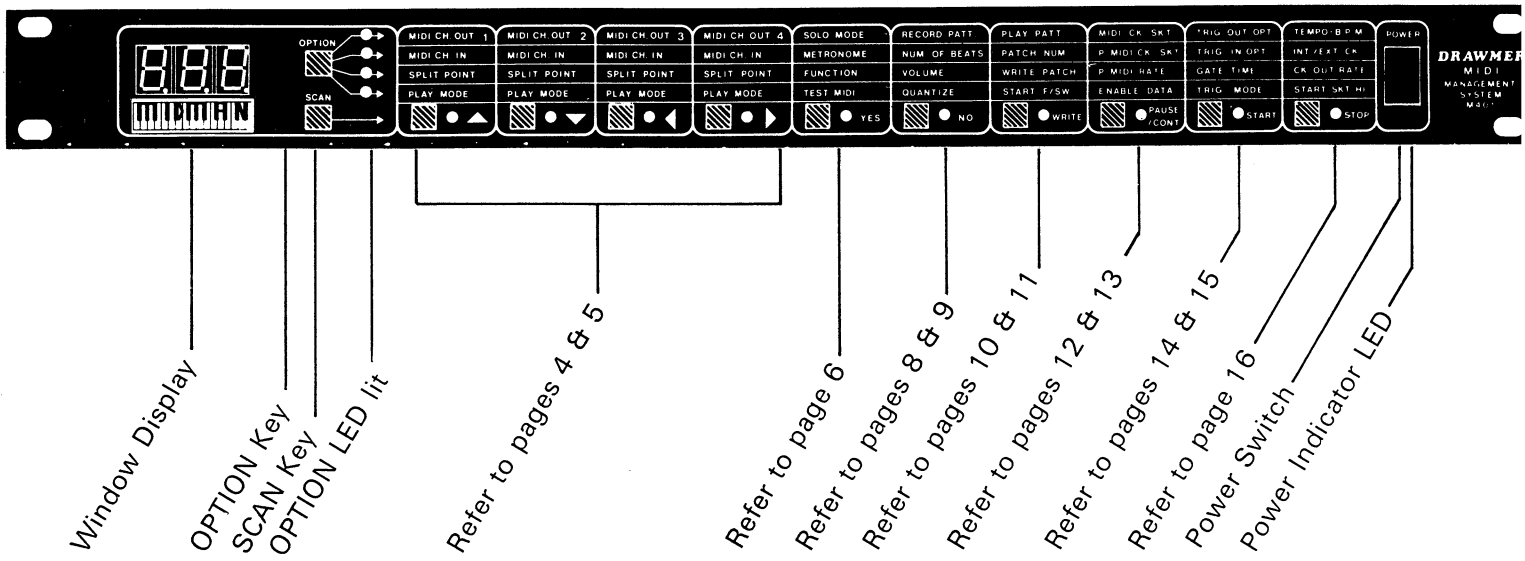
It is important to remember that the MIDMAN is a highly versatile device which is capable of 'fooling' MIDI. For this reason, take great care to set the parameters correctly, especially the split points and trigger/play mode options. Incorrect settings are likely to be the cause of any failure to produce the desired results.

The following pages are arranged so as to explain each individual option for a particular selection. Each block of four options are as they appear on the MIDMAN front panel (working from left to right), with any appropriate examples. In addition, space is provided to allow the user to make notes as necessary, which may assist at a later time. Some standard abbreviations used in the text are:-
CK = Clock; Skt = Socket; Ch = Channel; Num = Number; Trig = Trigger

THE MIDMAN FRONT PANEL

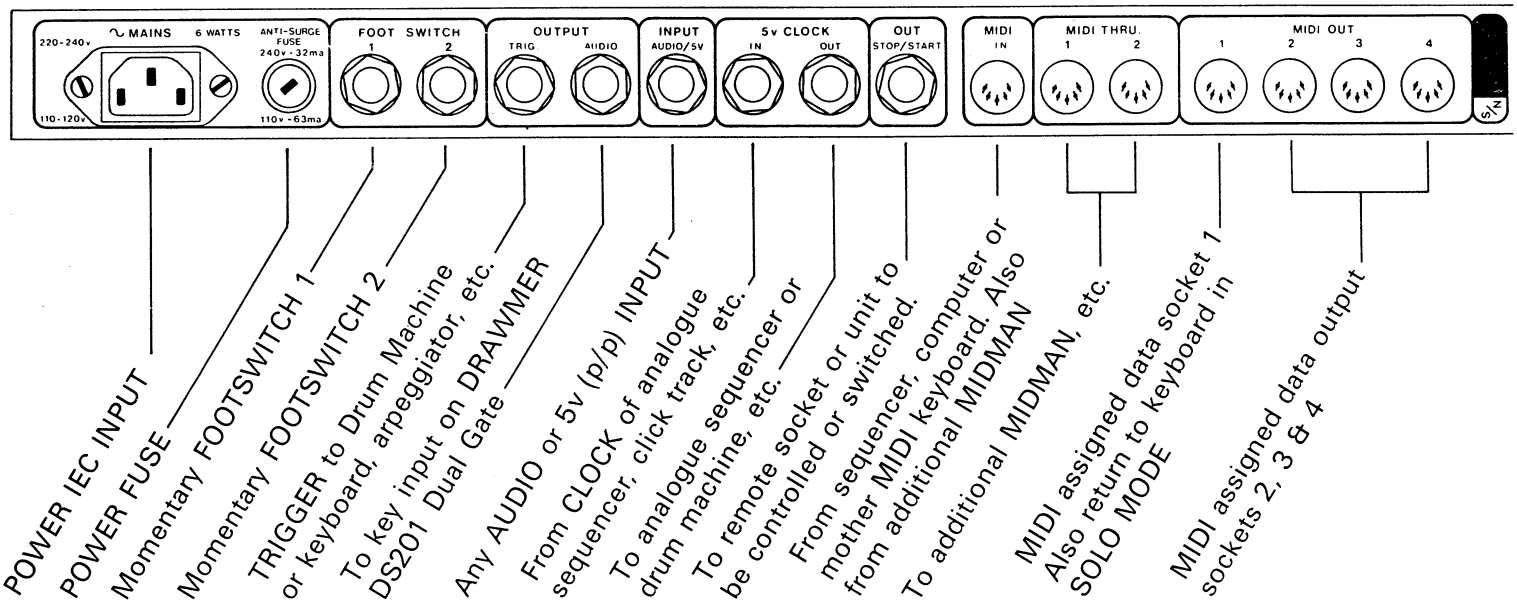
The diagram below shows the MIDMAN front facia. Each SELECTION box (of four *OPTIONS*) has page number(s) shown where each function is fully explained.

One *OPTION* LED will always be lit, and if not in the *SCAN* mode, one other LED will show which SELECTION box is current. The intersection of the two lit LEDs is the current function being reviewed/edited.

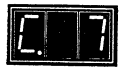


THE MIDMAN BACK PANEL

The diagram below shows the layout of the MIDMAN rear panel. The eight 1/4" mono jacks and the seven 5 pin Din sockets are refered to throughout the following function descriptions. Although some suggested connections to other units are shown, this is by no means, the limit of the MIDMAN's capabilities.



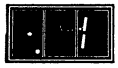
THE FIRST FOUR OPTIONS ARE IDENTICAL FOR THE BOXES LABELED CH 2, 3 & 4

OPTION	FUNCTION	DISPLAY
1	**MIDI CH. OUT 1.** (MIDI CHANNEL OUT same for 2, 3 & 4) Using *Up/Down* arrows, set the MIDI output channel for MIDI output socket 1 to 4. Channel range is 1 to 16. Example of use: Data is to be sent from a sequencer to several keyboards. Some of the keyboards being used will only receive data in Omni mode or on channel one only. A solution is to send to the MIDMAN on any unique channel (say. 13). Set *MIDI CH. OUT* to 1, set the keyboard receive channel to 1. Set the *MIDI CH. IN* to 13 and the result is the sequencer assumes to be sending to Channel 13, the keyboard sees data on Channel 1.	 to 
2	**MIDI CH. IN** (MIDI CHANNEL IN) Select MIDI input channel to send to the MIDI output socket using the *Up/Down* arrows. The MIDMAN also has 'OFF' as an alternative, whereby MIDI note data is prevented from being transferred to the MIDI output socket. N.B. clock data, etc. is still transmitted if selected to do so. Eg: A sequencer in use only has 8 output tracks. Each track has a pre-defined channel number, corresponding to the track number (track 6 is MIDI channel 6). Track 6 could be sent to an alternative channel (eg. 2) by setting *MIDI CH. IN* to 6 and then setting the *MIDI CH. OUT* to 2.	 to  or 
3	**SPLIT POINT** Set the keyboard split point for MIDI output socket using the *Up/Down* arrows. The # (Sharp) is shown as '=' e.g. the note C# above middle C is shown as  *Right* arrow splits the keyboard above the selected note and will include the actual 'split note'  The *Left* arrow splits below, but dosen't include the split note. This is shown on the display as a decimal point to the right or left, respectively. This function is extremely powerful when used in conjunction with *PLAY MODE.* A full music piece is being played into the MIDMAN, using a suitable split point the bass portion of the music could be sent to a bass synthesizer to fatten-up the bass sound. Alternatively the high end could be sectioned off. The above operation involves choosing where on the keyboard the split point is to be, deciding if you want to hear notes above or below that point, (using the *Left/right* keys), and then selecting a suitable *PLAY MODE* (eg. 3 or 4). *PLAY MODE* 4 can be further enhanced by 'killing off' the sound in the split section by depressing Footswitch 2.	 to 

4 **PLAY MODE**


to


Select mode using *Up/Down* arrows according to the table below. The centre decimal point shows play mode is being adjusted Press *'YES'* to select a 'force hold' of the triggered notes. 'Force Hold' implies the note is remembered and sounded when triggered, but not held continuously.
'h' is displayed in the Lefthand digit e.g.  or press 'No' for triggered notes to only sound when actually pressed down.

Pressing the *Left/Right* arrows puts you into the 'Patch Routing Mode'. The *Left* Arrow displays the program number that the MIDMAN will recognise, in the range  to  a Left-hand decimal is shown.
The *Right* Arrow shows the actual program number that is sent to the unit connected to this socket, shown by a Right-hand decimal point.

 to  or 

The range of program numbers sent is 1 to 128 and also the 'OFF' option is offered, which means that no program change is sent. The program numbers are edited using the *Up* or *Down* keys. See also the *ENABLE DATA* function 3. See also *SOLO MODE,* where 'Patch Routing' is disabled on MIDI Out Socket 1. This is because to choose a 'Patch' on the keyboard in the 'solo'-ed mode, and then the MIDMAN re-assigning that choice, is obviously undesirable.

Choices for keyboard *'PLAY MODES'*

1: Normal playing over the whole keyboard.
2: As 1: but turned on/off by footswitch 2.
3: Normal playing in split section (above or below split point).
4: As 3: but turned on/off by footswitch 2.
5: Triggered playing over the whole keyboard.
6: As 5: but turned to normal playing by footswitch 2.
8: Triggered playing split section.
9: As 8: but turned on/off by footswitch 2.
10: As 8: but turned to normal playing by footswitch 2.
11: Triggered playing in split - normal playing over rest of keyboard.
12: As 11: but turned to normal playing by footswitch 2.

Note: Triggered playing will only work under one of the following conditions:-

(a) With a clock running, (either Int. Ext or Ext MIDI).
(b) With a trigger rate or pattern selected.
(c) When Trig in to Trig Out is selected (see *TRIG OUT OPT* , I-o). When the clock is stopped, the trigger section will assume the normal playing mode, unless Trig In to Trig out is selected or *TRIG MODE* is set (N.B. *TRIG MODE* only plays notes when triggered but not when actually pressed down, unless selected to do otherwise).

OPTION	FUNCTION	DISPLAY

1 **SOLO MODE**

or

This mode only applies to MIDI output socket 1.
Selecting 'solo' will disable MIDI 'Patch Routing' from working via MIDI Out Socket 1. Patch Routing, if enabled, will still operate for the other MIDI Out Sockets (2, 3 & 4).
Select solo or sequencer mode by pressing *Yes/no. 'Yes'* is solo ('sol' is displayed) whilst *'No'* is sequencer mode ('nor' is displayed showing normal operation). In solo mode, connect 'MIDI out' from keyboard to 'MIDI in' on MIDMAN. Then connect MIDI Out 1 from the MIDMAN to MIDI in on the keyboard. This will play the keyboard via the MIDMAN. If the keyboard power is turned off, then on again, the keyboard will return to normal playing.

If *'SOLO MODE'* is not selected, connecting as above will cause the keyboard to play two notes of the same pitch when one note is pressed. This could be used as a useful duophonic mode, similar to unison. An 8 voice polyphonic keyboard will then become 4 voice. A few keyboards do not respond to the 'Remote keyboard' MIDI code that is sent when *'SOLO MODE'* is selected, to test if solo mode is working remove the MIDI input lead to the keyboard and then the keyboard should not play.

Remember to select the same channel numbers for *'MIDI CH OUT'* and *'MIDI CH IN'* as are selected on the Mother keyboard. This is normally channel 1.

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2 **METRONOME**

or

Turn the metronome on or off using *Yes/No.* The length of each metronome 'beep' is in proportion to the tempo, i.e. shorter sounds for faster rates.

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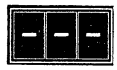
3 **FUNCTION**



This is not used at present. See last page of this manual.

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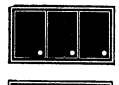
4 **TEST MIDI**

This is used to test the incoming MIDI information, including the input lead.
When you first select the *'TEST MIDI'* option, the display will show what channel(s) the MIDMAN will be 'testing'. This is normally every channel, where 'ALL' will be displayed. Alternatively, use the *Up/Down* keys to select just one channel to be 'tested'. This latter option is useful in a multi-keyboard operation. It also, selects which channel the MIDMAN will listen to for incoming 'Patch' information. See *'PATCH NUM'.*
Three dots are displayed until MIDI data is received.



The display then shows 'CL' for clock timing infomation, (usually from drum machines or sequences),

or 'dAt' for other MIDI data (note information, pitch bend, volume etc.).

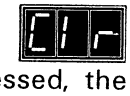
A simple use for this is to test that your MIDI cables are in good working order. Connecting MIDI OUT from a keyboard to MIDI IN of the MIDMAN and then pressing a note or function will display 'dAt'. Also, it is useful for checking correct IN to OUT orientation of cables.

1 **RECORD PATT.** (RECORD PATTERN)

Firstly, this function is not available if the *'PLAY PATTERN'* option is set to trigger. If this is the case, then  will be displayed,

and trying to select *'RECORD PATT'* will cause the MIDMAN to select *'PLAY PATTERN'* for you so that a 'pattern number' may be chosen. *PLAY PATTern'* is used to select a bank of patterns (A to H) to either be recorded, or edited, using this *RECORD PATTern* option.

'RECORD PATTERN' allows 8 patterns of up to 99 beats in length to be stored for each of the four outputs making 32 in all. The stored patterns will then be available (4 at a time, one on each MIDI output) for use by *'PLAY PATT'* (see later).
To record a pattern, connect the MIDI output from a keyboard, to the MIDMAN input. Then connect the MIDMAN output either to the same keyboard MIDI input or another keyboard.
N.B. Simply connecting the keyboard output to the MIDMAN input will work, except that the sound from the keyboard will be 'as played'. It is better to hear the sound after it has been processed by the MIDMAN (rather like 'off tape monitoring').

After connecting up, select the pattern number using the *'PLAY PATTERN'* option (A to H). Then select *'RECORD PATTERN'* and use the *Up/Down* keys to select which socket this pattern is going to sound through (1 to 4). Next press *'Yes'* to clear the memory for that pattern and to set the bar length to the current *'NUMBER OF BEATS'* to the bar' value.  is displayed

If *'Yes'* is not pressed, the MIDMAN will just update the pattern already in memory. This of course is how you would edit an existing pattern, see also *'VOLUME' and 'QUANTIZE'.*

In *'RECORD PATTERN'* the *'METRONOME'* is automatically enabled. The metronome will sound longer on the first beat of the pattern. Pressing *'START'* will begin the count and  will be displayed in the window. The count will continue to the end and loop around until *'Stop'* or *'Pause'* is pressed. A decimal point will appear next to the 'E' (as shown above) and each time the pattern loops on itself, the point will flip to the other side of the 'E'. ie.  is displayed.

Press *'Stop'* when finished, then press *'Write'* to store in memory. Pressing *'Start'* will play the pattern, but any mistakes can be overwritten simply by playing over the mistake. When satisfied, press *'Write'* to store the pattern in memory.

The display shows 

If a difficult or complex pattern is written, this may require several edits. Press *'Write'* each time a successful edit is completed, just in case the next edit is unsuccessful. If  is displayed during *'RECORD PATT',* all the recording space has been used. Pressing *'Start'* will revert back to the pattern as it was when *'Start'* was last pressed, (the last 'take'). A remedy is to play more sparingly. The process may be repeated for the other three channels, which can feed three other keyboards or drum machines, etc. if required.

The patterns recorded using this option are stored as a library which can be used by *'PLAY PATTERN'* (see later) when setting up patches for actual use. Four patterns will appear simultaneously (one on each output), if all four patterns were recorded.

One obvious use for the *RECORD PATT*ern is to free space in a sequencer. Ideally the rhythm of the pattern should be a short and repetitive (within the limits of *NUMber OF BEATS*). This rhythm pattern can be 'played' in real time along with the other tracks. With the rhythm and volume already pre-programmed it is simple to just play the chords/notes, as required. If the track has little musical movement, use one of the play modes with the 'Hold' option set. With this function the chords/notes are played in the written pattern timing and they are remembered until other keys are pressed. A suitable *PLAY MODE* would be option 8 (or h 8). If footswitch options are required eg. to remove note triggering during a 'middle 8' then *PLAY MODE* option 9 (0r h 9) or perhaps 10 (h10) would be more affective.

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2 **NUM. OF BEATS.** (NUMBER OF BEATS)

Set the length (in beats) of the pattern to be recorded when *'Yes'* has been used to clear the pattern before recording.

to

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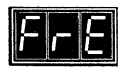
3 **VOLUME**

Adjust volume using *'Up/Down'* keys. When a value between 1 and 9 is chosen, the MIDMAN forces any keyboards connected to any of the output sockets to the volume setting chosen. 'FrE' will sound the volume as it is actually played.
N.B. Some MIDI keyborads ignore volume settings.
When a pattern has been recorded it will be replayed by *'PLAY PATTern'* at the recorded volume recorded, regardless of the current volume setting.

to

or



Effective rhythm patterns can be created with this utility by recording most of the pattern at a low volume level (between 1 & 4) and then adding extra notes at a high level (say 8 or 9). As in quantise, this can be used to over-ride any errors if recording from a velocity sensing keyboard.

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4 **QUANTIZE**

(rate)

to

Quantize rates of 1,2,3,4,6,8,12 and 24 are offered.

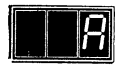
1 = Whole beat resolution	2 = Quaver resolution
3 = Triplet resolution	4 = Semiquaver resolution
6 = Quaver triplets	8 = Demi-semiquaver
12 = Semiquaver triplets	24 = Free time recording

This enables your recording to be automatically corrected to the nearest Quantize time. Short duration notes will be lengthened to the selected Quantize time, i.e. if 1 is selected, all notes will be one beat in length. For this reason, do not select a Quantize time of too low a value. However, this function can be useful for correcting small timing errors, within reason. A quantize value should be determined with the highest sensible resolution, eg. if the fastest time required in a recorded pattern is to be quavers a quantize value of 2 (or 4 for shorter length notes) would correct any human fluctuation.
Use the *Up/Down* keys to select different rates.

OPTION	FUNCTION	DISPLAY

1 **PLAY PATT.** (PLAY PATTERN)

Select a set of four patterns to be played (or to be edited or recorded via *'RECORD PATT'*) using this function. The patterns played are those recorded using *'RECORD PATT'*. Pattern sets are lettered A to H and are selected using the *'Up/Down'* keys. Of course, if the pattern number is empty, then nothing will happen.
Selecting 'tr' will disable *'PLAY PATT'* and accept trigger pulses from the trigger input or from the internal clock, depending on the setting of the *'TRIG OUT'* function.


to

or


PLAY PATTern has four simultaneous rhythm patterns available which when connected to keyboards with different sounds, can give intricate patterns with precision timing and volume information. This could save memory space in a sequencer.

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2 **PATCH NUM.** (PATCH NUMBER)

This function is used to 'call up' a stored set of front panel parameters. Also any pre-recorded patterns that were 'active' within the patch are recalled. See next option *WRITE PATCH.*
32 patches are available using the *Up/Down* keys to select patch numbers. Alternatively, while this function remains selected, both Footswitches (F/S 1 and 2) are used to count up or down the patch numbers. F/S 1 counts up whilst F/S 2 counts down. When any clock in the system is started, the Footswitches revert back to normal operation, the centre decimal point is lit to show this function.


to


Furthermore, pressing the *Left* Arrow key will display the Incoming program patch number which if sent to the MIDI IN socket, will select the MIDMAN patch routing number if the system clock is not running. Edit using the *Up/Down* keys. A lefthand decimal point is lit to show the Incoming patch number.
Similarly, pressing the *Right* Arrow key will display the MIDMAN patch routing number which will be selected for the incoming patch. A Righthand decimal point is lit to show this function.
To return to editing the MIDMAN patch number the *Option* key will have to be pressed four times.


to


to


The factory setting for this sub-function of *PATCH NUM* is 'OFF'. Because this feature is very powerful it should be used with great care. Note also that incoming MIDI data for a patch change is only understood when the system clock is stopped. Of course, as each new patch is called, the operation of 'patch routing' is changed, dependant on *ENABLE DATA 3,* which can sometimes (n3) disable this function. See also *TEST MIDI* for assigning a 'receive channel' to the MIDMAN.

If a very complicated piece of music is to be played in real-time where many parameter changes are required on instruments connected to the MIDMAN, changing from one patch to another is the only operation that needs to be done. All the stored program changes, trigger modes, tempo speeds, clock data etc. is instantly set up with each new patch.

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3 **WRITE PATCH**

Select this function when a set of front panel parameters is required for later recall. This includes any rhythm patterns which are selected using *'PLAY PATT'*. use the *Up/Down* keys to select the patch number, then press

'WRITE' to store the patch in memory. This will overwrite the previous settings in that patch. A written copy of the settings may be made for future reference. See Appendix 2.
Modifications can be made to existing patches by selecting a *'PATCH NUM'* and changing the necessary settings. The modified version can be stored separately using *'WRITE PATCH'* and changing the patch number. If the same number is used, the original patch will be overwritten.

to

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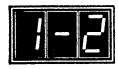
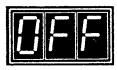
4 **START F/SW.** (START FOOTSWITCH)

Normally, a clock is started by pressing *'Start'.* (Shown by 'nor' being displayed. However, it is possible for Footswitch 1 to be used as the *'Start'* key. This may be useful in a live situation. In any case, the *'Start', 'Stop'* and *'Pause/Cont'* keys are still active. Use *'Yes'* or *'No'* to change the function.

or

There may be instances when you haven't got a free hand to press *Start,* especially if you are set up for your 'master take'. The remedy is to assign Footswitch 1 to perform the start function and connect up the Start/Stop socket to the pause facility of your tape machine (Check the manufacturers specification for suitablity and High or Low polarity).

OPTION	FUNCTION	DISPLAY
1	**MIDI CK. SKT** (MIDI CLOCK SOCKET) It is possible to send MIDI real time clock data to the output sockets. This data is superimposed onto any other data which appears at the output and is used to force the timing of sequencers and drum machines to synchronise with either the MIDMAN internal clock or any other clock which is operating the system. Any one of the four outputs can be selected, or outputs 1 and 2 together, or OFF. Selection is by means of the *Up/Down* keys. Some pieces of equipment require other clock rates which are multiples of the system clock. If this is the case, use the next option, otherwise one or more pieces of equipment may be operating at, say, twice the speed. A good use of this facility is to send the MIDI clock to a specific MIDI OUTput socket, at the same time setting the MIDI INput CHannel of that socket to 'OFF', this will then sync a MIDI controllable Drum Machine, without the problem of the drum sounds being triggered by MIDI notes on the bus. (Often shown by extraneous random drum triggering, which of course is undersirable).	 to  or  or 
2	**P. MIDI CK. SKT** (PROGRAMMABLE MIDI CLOCK SOCKET) Where equipment operates at multiples of the real time clock, use function to send a divided MIDI clock rate to the output sockets. Any one of the four outputs can be selected, or outputs 3 and 4 together, or off. Selection is by the *Up/Down* keys. The clock rate supplied by this function is selected by the next option. The MIDMAN will not allow *'MID CK'* and *'P. MIDI CK'* to have the same output socket selected. This accounts for the Up/Down keys 'jumping' a selection, due to it being used by the *MIDI CK OUT* function. There are a few MIDI controllable sequencers that require a non-standard MIDI clock rate, intelligent use of this function will enable the use of such sequencers (or perhaps drum machines) to run in sync with other more standard units. A similar set-up as described in *'MIDI Clock SocKeT'* is advised.	 to  or  or 
3	**P. MIDI RATE** (PROGRAMMABLE MIDI CLOCK RATE) This function divides the system clock by either 1,2,3,4,6,8, 12, and 24, selected by the *Up/Down* keys. This ensures compatibility with most MIDI equipment. The divided clock is sent to the output sockets via *'P. MIDI CK. SKT'*. The system clock can be Internal. External or External MIDI. This is selected using the *'INT/EXT CK'* function. Used in conjunction with Programmable MIDI ClocK SocKeT this could be used to force a drum machine/sequencer to run at a slower rate than the actual clock is running. Interesting effects can be achieved by running two drum machines at different rates.	(rate)  to 

4 **ENABLE DATA**

Specific MIDI data is sent to the MIDI output sockets by selecting 'Y' against the 5 options using the *'Yes'* key.

The display shows  to 

By using the *'No'* key, any of the options can be diabled.

The display then shows  to 

Use the *'Up/Down'* keys to select the option numbers. See below.

Enable Midi Data Table.

1: Pitch bender.
Disabling the pitch bender gives a very full sound with two brass sounds MIDIed together but only bending the pitch on one keyboard. Or if a bass synth is being taken from the keyboard part (using SPLIT POINT and PLAY MODE this would not want to be pitch-modulated as the righthand part might be.

2: After touch and modulation wheel.
Again (as above) to remove Modulation Wheel and After Touch which can ruin some of the more subtle sounds.

3: Program change. Patch routing data sent from the MIDMAN.
This facility is to used in conjunction with the stored program changes that are called up with each new patch. Disabling this feature allows you to try new sounds on the master keyboard without corrupting the other programs selected on the MIDI bus.

4: Control Data e.g. Vibrato, sustain, etc.
With this function enabled, if you pressed a sustain pedal on the master keyboard, sustain would go onto every other MIDI keyboard connected ! Sometimes this is not desired.

5: System Exclusive Data.
The option (Y 5) should be used with caution. If you want to kill off very dangerous data transmissions then select 'n 5'. Data transmissions (from one keyboard to another) unless intended, can ruin sequence patterns, keyboard memory and can corrupt most MIDI set-ups.
Use 'n-5' to prevent manufacturer identification codes being sent. (This also can corrupt note data).

1 **TRIG. OUT OPT** (TRIGGER OUTPUT OPTION) (see table)

This function is offered to give a MIDI trigger pulse in sync with either a division of the clock, or from an audio source. It also gives an appropriate pulse at the 'Trig Out' and 'Audio Trig' output jacks for subsequent triggering of other equipment such as the DRAWMER DS201 Dual Gate, with or without the T102 Interface. (The T102 is useful for providing delayed gating).

Select options from the table below, using *'Up/Down'* keys. All these options are dependent of *'GATE TIME', 'PLAY PATT'* and *'PLAY MODE'*

TRIGGER OUTPUT TABLE

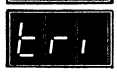
: An output trigger pulse occurs for every trigger input from the 'Trig In' Jack.

The following options are derived from the system clock:-

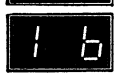
: Four trigger pulses per beat. (Semi-quavers)

: Three trigger pulses per beat. (Quaver triplets)

: Two trigger pulses per beat. (Quavers)



: Three pulses every two beats. (Triplets)

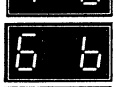


: One trigger pulse every beat. (Crotchets)

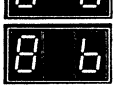
: One trigger pulse every two beats. (Minims)

: One trigger pulse every three beats. (Dotted-minims)

: One trigger pulse every four beats. (Semi-breves)



: One trigger pulse every six beats. (Dotted-semi-breves)



: One trigger pulse every eight beats. (Breves)

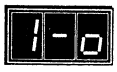
The place that the trigger pulse selected actually 'sounds' can be shifted in units of one MIDI frame by pressing the *Left/Right* arrow keys. Each press of the *Right* key makes the trigger pulses sound one frame late. The maximum delay is just over eight beats behind the time the pulse should normally occur. Pressing the *Left* key will bring the delayed pulse one frame earlier. Obviously, the trigger pulse cannot be brought forward of its natural time position. One use of this offbeat effect is to obtain timing patterns that don't occur in the above table. eg. Select '1 b' then press the *Right* key 12 times, then what was one pulse per beat (on the beat) will now trigger on every offbeat. This 'offbeat' facility is cleared by selecting another *'TRIG. OUT OPT'*.

This one option will be amongst the most used MIDMAN facilities. To trigger a MIDI keyboard in time with, for example the cowbell of a drum machine. Plug the output of the cowbell into the Audio/5v Input jack. Set the *TRIG OUT OPT* to 'I-o' (literally 'Input to Output'), then set the *GATE TIME* to just under the shortest time required or shorter for a more stoccato sound (see Gate Time table). Select a suitable *PLAY MODE* (eg 11). For every cowbell pulse that occurs any notes pressed will simultaneously trigger. For a trigger pulse in time with the clock then use one of the other trigger options.

MIDI Note Triggering only occurs when 'PLAY PATT' is set to 'tr'. Although the various 'Trigger' jack sockets function in either mode.

1 **TRIG. IN OPT** (TRIGGER INPUT OPTION)

Use *Up/Down* keys to set Trigger input options. Either a +5v pulse or an audio signal may be applied to the 'Trig In' jack.

 : When an input trigger occurs, normal 'Trig In' functions respond.

 : Input Trigger causes clock Start/Stop.

 : Trig in has no effect.

On use of 'SSt' could be for a drummer to strike a pad which would Start and Stop the system clock.

---

3 **GATE TIME**


to


This selects (using the *Up/Down* keys) the length of the 'Trig Out' and 'Audio Trig' pulses which are sent to the output jacks by *'TRIG OUT OPT'*. Ranging from 1 to 99 frames.

Each gate period is 1/24th of a beat (one frame), so 99 would give a gate time of just over 4 beats (96 = 4 beats exactly). The length of the trigger pulse generated by *'TRIG OUT OPT'* will be affected by the selected gate time. The same applies to the *TRIG INPUT* pulses that are detected. (A well chosen value will filter out unwanted input pulses).

A value greater than shown in the table below will result in the Trigger pulse remaining fully turned on. This may, of course, be a requirement in some cases. N.B. when retrigger mode is selected all trig pulses will be effective.

TRIG OUT OPT - - >	4	3	2	tr	1 b	2 b	3 b	4 b	6 b	8 b
MAX GATE TIME - >	5	7	11	17	23	47	71	95	n/a	n/a

For the *TRIG OUT OP*Tions tabled, a *GATE TIME* setting greater than shown will cause the Output Trigger to remain on. Even the figures shown will only give an 'off time' of 1/24th of a beat.

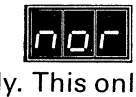
Gate time is linked to *'TEMPO B.P.M'*. (see later). A faster tempo will reduce the real-time duration of the gate time.

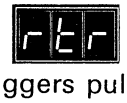
---

4 **TRIG. MODE** (TRIGGER MODE)

Select the correct trigger mode using the *Up/Down* keys.

The display  will only sound when a trigger is present.

The display  will sound notes when triggered and when played maually. This only applies to trigger areas selected by *'PLAY MODE'* and *'SPLIT POINT'*.

The display  will act as 'tr' above, and will also sound if any multiple re-triggers pulses occur within the selected *'GATE TIME'*.

Similarly  display is as normal above and will also sound if any multiple re-trigger pulses occur within the selected *'GATE TIME'*.

OPTION	FUNCTION	DISPLAY

1 **TEMPO B.P.M.** (TEMPO BEATS PER MINUTE)

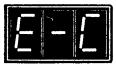
Select the Tempo of the MIDMAN internal clock using the *Up/Down* keys. Display is in 'Beats per Minute', except when an external clock is selected using the next option. In this case, E-C or E-n will be displayed. However, if a change of tempo is attempted, the MIDMAN will automatically select the Internal clock.

---

2 **INT/EXT CK** (INTERNAL OR EXTERNAL CLOCK)

Choose one of the following 3 clock sources using *Up/Down.* The selected clock is refered to as the System Clock.

= Internal clock as set by *'TEMPO B.P.M.'*



= External clock. This is a +5v clock pulse arriving at the 'Clock In' jack. The MIDMAN will send a MIDI 'start code' when the clock pulses begin and a stop code after clock pulses have stopped for a period of 1/2 second. This will enable sequencers, etc. to restart in sync. The MIDMAN *'Stop'* and *'Start'* keys can be used to force a stop and restart if required.

= External MIDI clock. This option accepts MIDI clock data arriving at the MIDI input along with other information. Start and Stop information will then come from the MIDI system clock, so the MIDMAN *'Start', 'Stop'* and *'Pause'* keys are disconnected.

---

3 **CK OUT RATE** (CLOCK OUTPUT RATE)

Sets the number of +5v pulses per beat sent to the 'Clock Out' jack. Choices offered are 96, 48, 32, 24, 16, 12, 8, 6, 4, 3, 2, 1. The CLOCK Out number is a measure of state changes per beat. Hence a clock out rate of 4, actually only produces 2 full square wave pulses (4 changes in state).
N.B. 96, 48 and 32 pulses per beat are only available using the internal clock.

This function is provided for driving analogue clock drum machines, arpeggiators and other non-MIDI clocked units.

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4 **START SKT HI** (START OUTPUT SOCKET HIGH)

Set the Start/Stop jack socket to produce either a High or Low voltage when running. Use *'Yes'/'No'* keys. This can be used to switch audio effects on or off when a clock runs or stops. Mixed into the Start/Stop voltage is a 4KHz AC tone of 500mV. This could be used to permanently hold open a DS201 Drawmer Dual Noise Gate (Using the Key input) as soon as *'Start'* is pressed.

This could be used to switch any unit that requires either a 5v (High) or 0v (Low) switch to operate. This ranges from audio effect mute switches, 'pause' on a tape machine, etc. Please check with specific manufacturers requirements before connecting, if in doubt consult your dealer.

APPENDIX 1

MIDMAN TECHNICAL SPECIFICATION

MIDI DATA RECEIVED : ALL DATA
MIDI DATA UNDERSTOOD: ALL DATA
MIDI DATA TRANSMITTED: ALL DATA

5 PIN DIN CONNECTIONS

MIDI INPUT : Standard MIDI pin configuration
MIDI THRU (2 off) : As above
MIDI OUTPUTS (4 off) : As above

1/4" JACK CONNECTIONS

INPUT AUDIO/5V : Any signal source greater that 500mv peak-to-peak. Maximum input level 5V TTL level.

5V CLOCK INPUT : TTL compatible Clock input.

TRIGGER OUTPUT : Buffered 5V (TTL compatible) Trigger pulse, with programmable pulse width (see Gate Time).

TRIGGER AUDIO : 4KHz at 500mV peak-to-peak tone burst, with programmable pulse time (See Gate Time).

STOP/START OUT : Simultaneous 5V DC (TTL compatible) and contiuous 4 KHz (500mV) AC tone, (see Start Socket High).

FOOTSWITCH 1 : Momentary Footswitch socket causing programmable functions. NOTE: If a permanently shorting-type of Footswitch is used the MIDMAN functions will not perform as expected. This is not recommended.

FOOTSWITCH 2 : As Footswitch 1.

MAINS INPUT : 180 - 250V or 90 - 125V @ 50-60 Hz. 7 Watts. (The mains operating Voltage range is selectable inside unit. Please refer to qualified service engineer).

APPENDIX 2

MIDMAN PARAMETER CHART

The chart below is to allow the user to photocopy while still blank, and then complete with the MIDMAN front panel parameters.

This facility should be used to preserve valuable patch details where there is a chance that the patch contents will be inadvertantly over-written.

<Out Socket 1>	<Out Socket 2>	<Out Socket 3>	<Out Socket 4>
MIDI CH OUT 1:	MIDI CH OUT 2:	MIDI CH OUT 3:	MIDI CH OUT 4:
MIDI CH IN 1 : SPLIT POINT : Above/Below :	MIDI CH IN 2 : SPLIT POINT : Above/Below :	MIDI CH IN 3 : SPLIT POINT : Above/Below :	MIDI CH IN 4 : SPLIT POINT : Above/Below :
PLAY MODE : Hold On/Off :	PLAY MODE : Hold On/Off :	PLAY MODE : Hold On/Off :	PLAY MODE : Hold On/Off :
SOLO MODE :	PLAY PUTT :	MIDI CLK SKT :	TRIG OUT OPT:
METRONOME : VOLUME :	PATCH NUM : START F/SW :	P.MIDI CK SK : P.MIDI RATE :	TRIG IN OPT : GATE TIME : TRIG MODE :
TEMPO B.P.M. : INT/EXT CLK : CLK OUT RATE: START SKT HI :		ENABLE DATA Y 1 n 1 Y 2 n 2 Y 3 n 3 Y 4 n 4 Y 5 n 5	
	<EXTERNAL DEVICES CONNECTED>		
OUT SKT 1	OUT SKT 2	OUT SKT 3	OUT SKT 4
MIDI INPUT	THRU 1	THRU 2	INPUT AUDIO/5v
START/STOP	CLOCK IN	CLOCK OUT	TRIGGER OUT