ALESIS MMT-8

Multi track MIDI recorder

Alesis MMT-8 Instruction Manual

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1 Introduction



The Alesis MMT-8 Multi-Track MIDI Recorder is a user friendly, yet extremely powerful MIDI sequencer. It is able to record any information received at its MIDI INPUT jack (except poly-pressure and note off velocity), and store it into non-volatile memory for later retrieval. This information can include notes, controllers, pitch bend, after touch, program changes, and system exclusive data.

The MMT-8 can play back 8 tracks simultaneously and it functions in many ways like an 8 track tape recorder. The MMT-8's memory capacity is approximately 9,000 to 11,000 notes. Variable MIDI controllers like aftertouch, pitch bend, mod wheel, etc. will take up more memory, so the actual amount of note storage capacity will vary depending on how much these controllers are used. Each set of 8 tracks is called a `part'. There can be up to 100 parts in the MMT-8's memory ( 00-99). These parts can be combined into lists of parts, which are called `songs'. There can be up to 100 songs in the MMT-8's memory, and each can contain a list of parts up to 255 steps long.

By constructing songs in this fashion, the MMT-8 makes it very easy to arrange songs by recording one verse into one part, and a chorus into another, and a bridge into another, and then making a list of the parts into a song with as many verses, choruses, and bridges as desired.

The MMT-8 has many editing capabilities, which allow the user to alter any data after recording it. Notes can be transposed, timing corrected, copied, and erased. MIDI channels can be reassigned, controllers can be modified, etc. Also, the MMT-8 has an Autolocate feature which will allow you to jump to any desired beat number within a part or song (see auto-locate). Despite this flexibility, the MMT-8 is very easy to use, since these features do not get in the way of the more basic operations, like recording and playing back.

2 PART Mode

2.1 Selecting and Playing a PART

When power is first turned on, the sequencer will be in SONG or PART mode (SONG or PART LED lit), depending on the mode that was selected before power was turned off. The song or part number will also be the same as when power was turned off.

2.2 PART button

Press the PART button to enter PART mode if the sequencer is not currently in this mode. The LED next to the PART button will light and the display will read:



if part 00 exists, or



if part 00 has not yet been created.

2.3 Selecting a PART

The 00 is underlined to indicate that it will be changed if a new number is selected with the keypad or +/- buttons. The second line of the display shows the name of the part. If a part is empty, the display reads EMPTY PART. Pressing the +/- buttons immediately selects the next part number, with the numbers looping past 99 to 00 and looping down from 00 to 99. If a single digit on the keypad is pressed (3, for example), the display will change to:



The display is now indicating that the second digit of the part should be entered. After entering the second digit, the new part is selected, and its name is displayed. If the second digit is not entered within 2 seconds, the display will revert back to the previous part number, and no new part will have been selected. This type of keypad entry is consistent with all entries made with the keypad described in this manual. The page up and page down buttons have no function when selecting parts or songs.

2.4 Selecting TRACKs for playback

While in PART mode, the eight TRACK SELECT LED will display the tracks that are turned on (not muted) on the selected part. These buttons can be turned on or off to change the selected tracks to be played. Whenever a part is playing, the eight track select LEDs will show which tracks are playing. When a new

part is selected, all eight tracks are turned on. At any time, the track selection can be changed with the track select buttons. Pressing PLAY will start playing the selected part from its beginning, and the PLAY LED will light. The display will read, for example:



The display is now showing the current beat number and the part number that is being played. As each beat (quarter note) occurs, the display will advance the beat count. While the part is playing, the keypad and +/- buttons can be used to select a new part number, which will then be displayed in the display as follows:



At the end of the current part, the newly selected part number will play, with the beat count starting again at 001. The NEXT part to play can be changed up until the end of the current part is reached, after which the new part will begin playing, and the display will revert back to PLAYING PART.

Pressing STOP/CONTINUE will stop playing a part, and the display will return to the select part display. Any notes that were sustaining will turn off. Pressing STOP/CONTINUE again will begin playing a part from the beginning of the beat it was on when it was stopped, replaying all previously sustaining notes. Pressing PLAY will always start a part from the beginning. When a part reaches its end, the PLAY LED will turn off and the part will stop, unless LOOP is on, which will cause the part to continue playing from the beginning.

2.5 FAST-FORWARD

The << and >> buttons (rewind and fast-forward) can be used to advance or retreat through the beats of a part. If a part is playing, pressing the fast forward button will cause sustaining notes to stop, and the display to advance quickly one beat at a time until the fast forward button is released, after which the part continues playing from the beginning of the displayed beat.

2.6 REWIND

The rewind button works similarly, but in reverse. In either direction, if the end or beginning of a part is reached, the display remains on the last beat, unless loop is on, which results in the beat "wrapping around". When a part is not playing, these buttons can be used for the same function, and by pressing STOP/CONTINUE the song will continue from the last displayed beat. The fast forward and rewind button can be held down simultaneously to "freeze" the display on the current beat. It is also possible to Autolocate with the fast-forward and rewind buttons. This function allows you to go directly to any desired beat (see auto-locate).

3 Recording a PART

3.1 Selecting the RECORD TRACK

To record on a part, press the RECORD button. The RECORD LED will light. The track to be recorded always defaults to the lowest numbered empty track. For an empty part, track 1 will be selected. If a part has all eight tracks used, no track will be selected, and the RECORD LED will not light.

Every time a track is recorded onto, the next empty track will automatically be selected the next time RECORD is pressed. If a track other than the selected one is desired, pressing another track select button while holding down the RECORD button will select the new track to be recorded on. Like on a tape recorder, if a track with something on it is recorded over, the old information is erased.

Once the user has selected a track manually, the automatic track selection of the next empty track is turned off. This way, if the user wants to redo a track many times, he can select it once, and that track will remain selected until he selects another track. When a new part is selected, the automatic track selection is turned back on. If the track that is selected is reselected, it will stop flashing (and return to its previous state, flashing on or off), and no track will be selected for record (causing the RECORD LED to turn off when the RECORD button is held down, the display reads:



While holding RECORD, the track that is lit indicates the currently selected track to be recorded on. Any tracks that are flashing are currently empty, and any tracks that are not lit currently have something recorded in them. Any track (flashing, on, or off) can be selected to be recorded onto.

3.2 Entering RECORD

After releasing RECORD, the RECORD LED will remain lit to indicate that it is ready to record if PLAY is pressed, unless no track was selected (no track LED lit solid), which would cause the RECORD LED to turn off after releasing the RECORD button. If STOP/CONTINUE is pressed while the RECORD LED is on, the RECORD LED will turn off, indicating that record is disabled, but the selected record track will be remembered. To begin recording, press PLAY. If a track had been selected (RECORD LED on), then the beginning of the part, after counting down four beats (the countdown can be changed; see CLICK), during which time the display will read:



With each beat past, the display will change to 3, then 2, then 1, after which the display will change to:



The part number is not underlined, indicating that a new part cannot be selected while recording. While recording, the eight tracks can still be turned on or off. Pressing the RECORD button effectively "punches out" the record track, the RECORD LED turns off, and the part continues to play from where it was.

Pressing the PLAY button is also the same as punching out, except that the part will immediately start playing from the beginning. The rewind and fast forward buttons will also punch out. Pressing STOP/CONTINUE also punches out, but stops the part from playing as well.

When recording for the first time on an empty part, the track will continue recording until STOP/CONTINUE, FAST-FORWARD, REWIND, or PLAY is pressed. When one is pressed, this determines the length of the part, rounded to the nearest beat. When recording on any other track, the part will automatically stop when the end of the part (as determined by the first record track) is reached. If LOOP is on, the RECORD LED will turn off ("punch out"), and the part will begin playing from the start. It it possible to set the length before recording the first track, or to change the length after recording the first track (see LENGTH).

While holding the RECORD button, pressing and holding the LENGTH button will show on the display the percentage of memory still available to recording.

4 LENGTH

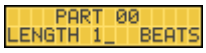
The LENGTH button is used to set the length of a part to a specified number of beats. While holding the LENGTH button, the display will show the current length of the current part. If it is an empty part, the display will read:



This indicates that no length has yet been set. If RECORD mode is entered without setting this length, the length of the part will be determined by the number of beats recorded before pressing STOP/CONTINUE, RECORD or PLAY. If it is desired to set the length before recording, the +/- buttons can be used to move the length up or down in single beat increments (000 minimum, 682 maximum), or a three digit number can be entered with the keypad. In either case, the new length is not entered into the part until the RECORD button is pressed. When RECORD is pressed, the display changes to:



This display remains until RECORD is released. If LENGTH is released before RECORD is pressed, no change to the length will be made, regardless of what was pressed on the keypad. If RECORD is pressed after entering a partial length (1 or 2 digits), nothing will happen. When entering in digits, the first digit entered (1, for example) results in the following display:



The display is now waiting for the entry of the second digit. If the second digit is not entered within 2 seconds, the display will revert to its previous value. If RECORD is pressed after entering an incomplete length (1 or 2 digits), the display will revert to its previous value.

When a new length is entered (RECORD), any information on any track of the selected part that was beyond the new set length will be erased. Any notes sustaining beyond the new end will automatically be given a new duration. If the new length is longer than the previous one, the additional length will be filled with silence. If it is desired to remove or add length to the beginning of a part, first set the desired length (as described above), and then press either page up or page down. The display will change to:



Pressing either page up or page down again will toggle back to the original display. If RECORD is pressed with the above display showing, any additional beats will be placed at the beginning of the part, and any beats removed will be removed from the part top. Notes that were stored in the removed beats will be removed regardless of their duration.

The LENGTH button has no effect in song mode, or while a song or part is playing.

5 ERASE

5.1 Erasing a PART

The erase button is used to erase a single track, part or song. When in PART mode, pressing and holding the ERASE button causes the following display:



The number 01 would actually be the currently selected part number. All 8 track LEDs will be lit. To erase the selected part, press RECORD. The display will change to:



The display will remain this way until the RECORD button is released, after which the display will return to its previous state.

5.2 Erasing a single TRACK

To erase a single track, press and hold the ERASE button (all track LEDs will light), and select the desired track number. The selected track's LED will remain lit, and the other track LEDs will turn off. Additional tracks can be selected, and their LEDs will come on. Pressing RECORD will erase any selected tracks.

5.3 Erasing selected information (notes, pitchbend, individual MIDI channel, etc.)

When erasing a track or part, it is possible to erase only selected data from a part or track. While holding the ERASE button, the page up and page down buttons below the LCD display can be used to select specific functions. If the arrow buttons are used, they will scroll through the following choices backwards or forwards depending on which button is pressed:

















thru



This feature makes it possible to erase specific data, such as the after touch on one track, without affecting the other data on that track or part. If erase after touch was selected and RECORD was pressed without selecting a track, all after touch on all eight tracks of the selected part would be erased.

5.4 Erasing a SONG

In SONG mode, holding the ERASE button will cause the following display:



Pressing the RECORD button will erase the currently selected song number. The eight track buttons are inactive when erasing songs. The page up and page down buttons are also inactive when erasing songs.

In all cases, the erase is not executed until RECORD is pressed. and will be aborted if ERASE is released before pressing RECORD. The ERASE button has no effect while a song or part is playing.

6 COPY

The copy button is used to copy or append a track, part or song, to another track, part or song. It only functions while the COPY button is held down. If the COPY button is released (either before or after the copy is executed), the previous mode will show up on the display, and copy mode is exited.

6.1 Copying a PART to itself

When in PART mode, and COPY is pressed and held, all 8 track LEDs will light, and the display will read:



Both displayed part numbers will actually display the current part number (00- 99). Pressing RECORD completes the operation, and the display reads:



This display remains until the RECORD button is released, which then returns the sequencer to the previous copy display (unless COPY is released as well). The above example demonstrated copying a part (all 8 tracks) to itself, which will double the length of that part.

6.2 Copying a PART to another PART

To copy a part to another part, press and hold COPY, then enter the two digit part number with the keypad. The display will show the selected part number. Pressing RECORD initiates the copy, and appends the source part (the current part before COPY was pressed) to the destination part (the part entered with the keypad). Again, all 8 track LEDs are lit, so all 8 tracks are copied.

If the destination part was empty, then the destination now contains an exact copy of the source part. If the destination was not empty, then the destination's length is increased by the length of the source part, and the source part is appended to the end of the destination part. Any MIDI assignments made on the source part's tracks will be overridden by the destination part's MIDI assignments.

6.3 Copying a TRACK to itself

To copy a single track to itself (useful for erasing all but one type of MIDI information, see below), press and hold the COPY button, select the desired track (its LED will remain lit and the others wil turn off), then press RECORD.

6.4 Copying a TRACK to another TRACK of the same PART

To copy a single track to another track of the same part number, press and hold COPY, and select the source track. The selected track's LED will remain lit, and all the other track LEDs will turn off. Now select the destination track. This track's LED will now flash, indicating that it is the track to be copied to. Pressing the RECORD button initiates the copy, and copies the source track to the destination track. If any information existed in the destination track, it is erased.

6.5 Copying a TRACK to another TRACK of a different PART

To copy a single track of one part to a single track of another, press and hold COPY, select the source track, select the destination part number, select the destination track, then press RECORD. If the destination track is the same number as the source track, the destination track button does not have to be selected before pressing RECORD.

6.6 Copying selected information (notes, pitchbend, individual MIDI channels, etc.)

In all of the above copy modes, the entire contents of a track of part are copied to the destination. It is possible to copy selected information from one track or part to another by using the page up and page down buttons to select the desired data while holding the COPY button. These buttons can be selected any time during the copy selection before RECORD is pressed. They will scroll backwards and forwards through 22 choices with the following displays:

















through



By scrolling through the list, any selected data can be copied from one track or part to another. For example, if a track contained notes on many MIDI channels that had been previously combined together, copying only one MIDI channel to a new track would allow the parts to be separated out again. Also, copying NOTES ONLY from a track to itself will effectively erase all pitchbend, controller, program change, after touch, and system exclusive data from that track.

6.7 Copying a SONG to itself

In SONG mode, pressing and holding the COPY button will result in the following display:



The 01 display will actually show the currently selected song number. Like in PART mode, pressing RECORD will append the current song to itself, making it twice as long.

6.8 Copying a SONG to another SONG

If a new song number is selected, the display will show the newly selected song number, and pressing RECORD will append the source song number (the number selected before pressing COPY), to the destination song number (the number selected while holding COPY). This mode is very useful, since a verse consisting of more than one part could be entered into a song, and then appended into another song when needed without having to re-enter the parts for the verse. None of the eight track buttons will have any effect when copying songs. The page up and page down buttons also have no effect when copying songs.

In all cases, the copy is not executed until RECORD is pressed, and will be aborted if COPY is released before pressing RECORD. The COPY button has no effect while a song or part is playing.

7 EDIT

The EDIT button is an on/off switch with an associated LED. All operations as discussed so far assume that EDIT is off. When edit is on, individual note editing can be achieved in part mode, and the list of parts in a song can be edited in song mode. To exit EDIT mode, press EDIT again (the LED will turn off), or select PART or SONG, which automatically turns EDIT off.

7.1 Editing a PART

When EDIT is pressed while in PART mode (PART LED lit), individual MIDI events can be edited. The eight track buttons are used to select which track is being edited. Only one track can be edited at a time (only one track is lit at a time). The display now shows the MIDI information of the selected track as follows:



The first three digits are the beat number, followed by the sub-beat count (00-95), followed by the note value, followed by the note velocity (01-127), followed by the note's duration (in beats and sub-beats), followed by the note's MIDI channel (1-16). The cursor is under the beat number, indicating that it can be changed with the keypad or the +/- buttons. To access the other parameters, the page up and page down buttons are used. They move the cursor as shown in the following displays:













The cursor moves to the next parameter, and will "loop around" past the last parameter back to the first. The MIDI channel is the channel that the note is output on if the track's MIDI channel is assigned to UNCHANGED. If the track is assigned to a specific channel, the original channel number will be shown in parenthesis. The note's MIDI channel can still be changed, but no effect will be heard unless the track's MIDI channel is assigned to UNCHANGED (see "MIDI CHANNEL").

Other MIDI information is displayed as follows: (This information will only be displayed if it has been entered into the sequence beforehand. See "Adding An Event".) For pitch bend, the display includes the beat, the sub-beat, MIDI channel, and pitch bend amount. The pitch bend range is from -8191 to +8192. The page up and page down displays scroll as follows:









Pitch bend amounts can be entered with the keypad, but the only way to achieve negative numbers is to use the `-' button until negative numbers are reached, after which any keypad entry will be negative.

For after touch, the display includes the beat, sub-beat, MIDI channel, and after touch amount. The after touch range is from 0 to 127. The page up and page down displays scroll as follows:









For controllers, the display shows the beat, sub-beat, controller number, controller amount, and MIDI channel. The controller range is from 0 to 121. The controller amount range is from 0 to 127. The page up and page down displays scroll as follows:











For program changes, the display includes the beat, sub-beat, program change number, and MIDI channel. The program range is from 0 to 127. The page up and page down displays scroll as follows:

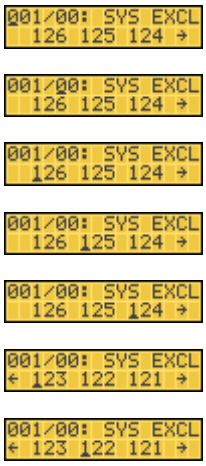








For system exclusive information, the number of parameters could be any value. Since this could contain a large amount of information, the page up and page down buttons continue to scroll the data through the display until the end is reached. The display includes the beat, sub-beat, and any system exclusive data, as follows:



7.2 Erasing an event

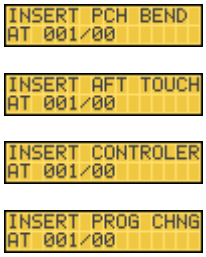
Any event being displayed can be erased by holding ERASE and pressing RECORD. Erasing an event removes it from the track, but does not alter the timing of the track. For example, removing a quarter note at the beginning of the track does not move everything else forward a quarter note.

7.3 Adding an event

An event can be added by using the COPY button. Pressing and holding COPY causes the following display:



Pressing the RECORD button will insert a note at the current beat location, with a note value of C3, a velocity of 64, and a duration of 1 beat. This note can then be edited as described above to any desired value. If something other than a note is desired to be inserted, the page up and page down buttons can be used to scroll through the other choices before pressing RECORD:



In the above choices, pressing RECORD will insert the displayed event at the current beat and with values of 0.

While in part EDIT, the fast forward and rewind buttons are used to advance and retreat respectively, through the list of MIDI events on the selected track. When the end of a track is reached, or if a track is empty, the display will read END OF TRACK. Playing a part while in part edit will play the part while continuing to display the events as they happen on the display.

8 Editing and Creating a SONG

When in SONG mode, the EDIT button is used to enter the song edit mode. This mode is used for creating or editing a song, which is a list of parts. The display appears as follows:



The step number can be moved forwards or backwards with the fast forward and rewind buttons. The part number is underlined, indicating that it can be changed with the keypad or +/- buttons. If a song is empty, the first step's part will be blank. The step past the last part of a song will also display a blank part. To change a part, simply type in a new part number. To erase a step, hold ERASE and press RECORD. The displayed step will be erased, and all parts from the steps past the erased step will shift down one step. To insert a part, press and hold COPY. The display will read:



The keypad or +/- buttons can be used to change the part number. Pressing RECORD inserts the part at the displayed step, and moves the previously displayed step and all subsequent steps one step back. When the buttons are released, the display reverts back to the song edit display.

8.1 Automatic TRACK selection and muting at each step of a SONG

You can select which tracks will playback at each step of a song by turning off the tracks you don't want to hear (LED's off) and leaving on the tracks you wish to hear (LED's on). The MMT-8 will store in memory which tracks were selected for playback at each step.

9 SONG Mode

9.1 SONG button

Press the SONG button to enter song mode. The display will read as follows, with the last song entered being indicated in the number portion of the display:



9.2 Selecting a SONG

The 00 is underlined to indicate that it will be changed if a new number is selected with the keypad or the +/- buttons. The second line of the display shows the name of the currently selected song (up to 14 characters). If the current song number is empty, the second line will read EMPTY SONG. Pressing the +/- buttons immediately selects the next song number, with the numbers looping past 99 to 00 and looping down from 00 to 99. If a single digit on the keypad is pressed (2, for example), the display will change to:



The display is now indicating that the second digit of the song should be entered. After entering the second digit, the new song is selected, and its name will appear. If the second digit is not entered within 2 seconds, the display will revert back to the previous song number, and no new song will have been selected. The page up and page down buttons have no function when selecting parts or songs.

A SONG is a list of parts (sequences) in a specific order, with each entry into the list being a STEP which contains a part number. Each step also contains which of the eight tracks should be on for that step.

9.3 Manual TRACK selection and muting in SONG mode

While in SONG mode, the eight TRACK select LEDs will display the tracks that are turned on, on the first part of the selected song. These buttons can be turned on or off to change the selected tracks to be played, although these changes will be temporary and not stored with the song. Pressing PLAY will start playing the selected song from its beginning, and the PLAY LED will light. The display will read, for example:



The first line of the display is now showing the current song number being played, and the current beat number of the part being played. The second line of the display is showing the step number and the part assigned to the step that is playing at the moment. When the song advances to the next step, the display will show the part for step 2, etc. The track select LEDs will change to show which tracks are turned on for the current part. Again, the track selection can be changed by turning on or off the track buttons.

Pressing STOP/CONTINUE will stop playing the song, and the display will return to the select song display. Pressing STOP/CONTINUE again will begin playing the song from the beat at which it was stopped. Pressing PLAY will always start the song from the beginning of the first step. When a song reaches its end, it will stop and the PLAY LED will turn off, unless LOOP is on, which will cause the song to loop back to step one and continue playing.

The << and >> buttons (rewind and fast-forward) can be used to advance or retreat through the beats and steps of a song. If the song is playing, pressing the fast forward button will cause sustaining notes to stop, and the beat display to advance at a gradually increasing rate (up to the maximum possible tempo) until the fast forward button is released, after which the song continues playing from the beginning of the displayed beat. If the end of the current step is reached, the next step is started.

The rewind button works similarly, but in reverse. In either direction, if the end or beginning of a song is reached, the display remains on that step, unless loop is on, which results in the step "wrapping around". When a song is not playing, these buttons can be used for the same function, and by pressing STOP/CONTINUE the song will continue from the last displayed beat. The fast forward and rewind button can be held down simultaneously to "freeze" the display on the current beat.

10 LOOP

The LOOP button is a simple on/off switch with an LED indicator. When LOOP is on, a part or song will loop back to its beginning when it has reached its end, and continue playing indefinitely. If LOOP is off, a part or song will stop when it reaches its end.

11 MIDI ECHO

The MIDI ECHO button is an on/off switch with an LED indicator. When MIDI ECHO is on, whatever information is present at the MIDI INPUT jack will be sent to the MIDI OUTPUT jack. When not in RECORD or RECORD ready (RECORD LED lit), the MIDI data is transmitted out unchanged.

When in RECORD or RECORD ready, and the track selected has been assigned to a specific MIDI channel (see MIDI CHANNEL below), then all MIDI information received will be transmitted out on the selected MIDI channel. This feature allows the user to hear a part playing on the desired synthesiser while it is being recorded. System exclusive information and polyphonic pressure are not echoed, and MIDI clocking information will be echoed only if the MIDI clock is being used for clocking the MMT-8.

12 NAME

The NAME button is used to change the name of a part or song. The name of a part or song is 14 characters long. An empty part or song will always have the name "EMPTY PART" or "EMPTY SONG", and cannot be changed. When a part or song is first used, its name is changed from "EMPTY PART" or "EMPTY SONG" to "NO PART NAME" or "NO SONG NAME". To change the name of a part or song, press and hold the NAME button. The display will read:



The cursor is now under the first character of the part or song name. Using the +/- buttons, any alphanumeric character can be selected, and the keypad can be used to enter numbers directly. The page up and page down buttons are used to move the cursor left and right on the display. When the desired name has been entered, pressing RECORD stores the name for that part or song. If RECORD is not pressed before releasing the NAME button, any changes to the name will not be saved.

13 MERGE

The MERGE mode is provided so that two tracks can be merged together (overlapped) onto one track. In part mode, when MERGE is held down, the display reads:



The eight track LEDs will be off. Press the first desired track (it will light solid), followed by the destination track (it will flash), followed by RECORD. The display will read:



This display remains until the RECORD button is released. The first track and the second track are now combined in the second track's location. The first track remains unchanged. The MERGE button has no effect in song mode, or while a part is playing. Note: When two tracks are merged. their MIDI channel assignments (see MIDI CHANNEL) are permanently assigned to the data of each track, and the new track's MIDI channel is assigned to UNCHANGED. This way, tracks assigned to different channels retain their channel independence on the same track.

14 MIDI CHANNEL

Like the COPY and ERASE buttons, the MIDI CHANNEL button is only active while it is held down. It is used to select the MIDI channel of a track or part (it has no function in SONG mode). When held down, track one's LED will light, and the display will show the MIDI channel selected for that track:



The keypad or +/- buttons can be used to change the selected track's MIDI channel, and other tracks can be displayed or changed by selecting the desired track button (only one track is lit at a time). The selection of the channel can be 0 (UNCHANGED), or 1 through 16. A given track always retains its recorded MIDI channel information, so that if a track contains notes from more than one channel, it can be played back as recorded. In this case, it is desired to assign the track to UNCHANGED, which means that it will output on the same MIDI channels as are recorded. Whenever a new track is recorded, it defaults to UNCHANGED. If a specific MIDI channel is selected (1-16). then the selected track's notes will all be output on the selected channel. However, the actual track information remains unchanged, so that returning a track to UNCHANGED will cause the separate MIDI channels to play back as before.

Note: An empty track can be assigned to a MIDI channel before recording onto it, which will cause that channel to be output while recording if MIDI ECHO is on. Also, if a track is copied to an empty track, its MIDI channel setting will be copied as well. If a track or part is erased, its MIDI channel assignment is left as it was.

15 QUANTIZE

The QUANTIZE button is used to correct the timing of notes to any desired beat value. QUANTIZE only moves note events, and does not alter controllers, pitch bend, after touch, program change, and system exclusive information. While holding down the QUANTIZE button in part mode, the most recently recorded track will be lit, and the display will read:



The 10 quantize choices are 1/2, 1/4, 1/6, 1/8, 1/12, 1/16, 1/24, 1/32, 1/48, 1/64. The +/- buttons or the keypad can be used to scroll through the choices. The keypad buttons 0-9 can also be used to select the quantize value directly, with 0=1/2 and 9=1/64. The track select buttons can be used to select the desired track(s) to be quantized. When QUANTIZE is first pressed, all eight track LEDs will be lit, indicating that all tracks will be quantized if RECORD is pressed. If a track button is pressed, all other tracks will turn off, and only that track will be selected. From that point on, each track select button will turn on or off its associated LED, so that any combination of tracks can be selected to be quantized. Pressing the RECORD button initiates the quantizing, and changes the display to:



This display remains until the RECORD button is released, which then returns the sequencer to its previous quantize display. The quantization process changes the start point of each note to the nearest quantize beat, but leaves the note release point where it was, which changes the actual note duration. Other quantizing options can be selected by using the page up and page down buttons. Pressing the page up button scrolls through the following choices:







If RECORD is pressed with QUANTIZE NOTE START & END being displayed, the release times of the notes will also be quantized to the selected quantize beat. If NOTE END is selected, only the release times of the notes will be quantized. If KEEP DURATION is selected, a note's duration will remain constant, i.e., if the start of a note is moved 1/16 note ahead, the release will also move 1/16 ahead.

In SONG mode, the QUANTIZE button is used to select an amount of clock offset for each track in a song. These offsets are global settings used by all songs, and do not affect the individual parts directly. The purpose of this feature is to allow the user to compensate for MIDI delays, and sound devices with slow attack times. While holding the QUANTIZE button in SONG mode, the first track LED will light, all others will be off, and the display will read as follows:



The value can be set from -48 to +48 384th notes (+/- 1/2 note) by using the keypad or the +/- buttons. Positive values represent a shift forward in time, and negative values represent a shift backward in time.

When entering a value with the keypad, the sign remains unchanged (except when entering 00, which is always positive). To change the sign, the +/- keys must be used to "pass through" zero to the other side. Each track can be selected and set independently. Of course, the first beat of the first part of a song cannot be advanced (it can't read minds...).

16 TRANSPOSE

The TRANSPOSE function allows for a track or part to be transposed by a user specified number of semitones. When TRANSPOSE is held down in part mode, the display reads:



The keypad can be used to enter a two-digit number of semitones to tranpose up from the original pitch (00-99), or the +/- buttons can be used to increment or decrement the amount. Like in ERASE mode, all eight track select LEDs are lit, indicating that the transposition will affect all tracks. If a track select button is pressed, all other track LEDs will turn off, and only the selected track will be lit. Additional tracks can be selected by pressing the select track buttons, which will toggle the LEDs on or off for each track. Pressing the page up or page down button will change the display to:



Now the number entered from the keypad selects the number of semitones to transpose down. For either transpose up or down, pressing the RECORD button executes the transpose command, resulting in the following display:



This display remains until RECORD is released. If a track that is transposed results in an underflow (notes below 0) or an overflow (notes above 127), the track will automatically re-adjust the pitch in octave increments until it is back in legal range.

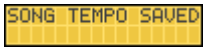
The TRANSPOSE button does not function while playing a part or song.

17 TEMPO

The TEMPO button is used to change the tempo of a part or song. The tempo is stored with a song, and not with a part. While in part mode, the tempo remains at its previous setting until changed. While in song mode, the tempo changes to the programmed tempo each time a different song is selected. While in either part or song mode, pressing the tempo button results in the following display:



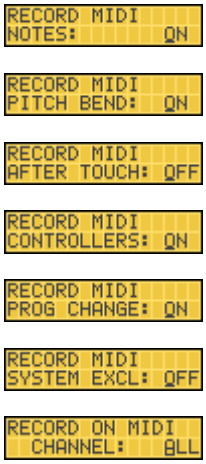
While holding the TEMPO button, the +/- buttons can be used to select a new tempo, or a tempo can be entered directly with three digits on the keypad. Tempo changes are effective as soon as they are entered, and the RECORD button does not have to be pressed. In part mode, the RECORD button has no function for TEMPO. In song mode (while not playing), pressing RECORD stores the selected tempo into the current song. Otherwise, it is a temporary tempo change that will be forgotten once a different song is selected. If RECORD is pressed, the display changes to:



This remains until the RECORD button is released. In both song and part mode, the tempo can be changed while playing.

18 MIDI FILTER

The MIDI FILTER button is used to select what type of MIDI information will be recorded by the MMT-8. While holding down the MIDI FILTER button, the page up and page down buttons can be used to scroll through the possible choices, while the +/- buttons can be used to turn each function on or off. The possible displays that can be scrolled through are as follows:



Pressing the `+' button changes the display to ON, pressing the `-' button changes the display to OFF. If a function is off, it will not be recorded into the MMT-8, and will not be echoed out the MIDI OUT jack if MIDI ECHO is on. The last page selects which MIDI channel the MMT-8 will record. Normally, it is set to ALL, which means that it will record on all MIDI channels. It can also be set to 1 through 16, which will cause the MMT-8 to ignore all channels but the selected one while recording. Selecting 00 on the keypad will display ALL, and the individual channels can be selected as 01 through 16. The default settings are as shown above, with all functions on except after touch and system exclusive.

19 CLOCK

The CLOCK button is used to set the clock input and output functions of the MMT-8. Pressing and holding CLOCK button allows access to the CLOCK pages. The first page is used to select the clocking source, and will display one of the following choices:







By using the keypad or +/- buttons, one of the three clocking sources can be selected. The default setting is MIDI & INTERNAL (1), with the other choices being INTERNAL ONLY (2) and TAPE SYNC (3). The page up and page down buttons can be used to scroll through the next two clock pages:





The +/- buttons can be used to turn each function on or off, respectively. The default setting is MIDI & INTERNAL clock source, MIDI CLOCK OUT ON, and AUTO START ON. There is no TAPE SYNC out switch, since this function is always active. The MMT-8 does not need to turn on or off its internal clock, since it intelligently determines what clock to use when necessary. A functional description of the clocking possibilities are shown in the table below:

Clock Source	Auto Start	Press Play	Receive Midi Start	Receive Tape Sync
MIDI & INTERNAL	OFF	2	6	1
MIDI & INTERNAL	ON	2	6	1
INTERNAL ONLY	OFF	2	1	1
INTERNAL	ON	2	2	1
TAPE SYNC	OFF	3	1	4
TAPE SYNC	ON	3	1	5

1. Do nothing.
2. Start playing from beginning with internal clock.

3. Enter play mode, but don't start playing until tape sync clock occurs.

4. If in play mode, start playing, otherwise ignore sync.

5. Start playing from beginning with tape sync clock.

6. Start playing from beginning with MIDI clock.

If tape sync and auto start are on and a part or song is playing, it will stop playing automatically if the tape sync signal is interrupted for more that 1 second. If auto start is not on, the MMT-8 will wait in play for more sync pulses.

20 CLICK

The CLICK button is used to set the rhythmic value that the metronome will have. Holding the CLICK button results in the following display:



The 10 click value choices are 1/2, 1/4, 1/6, 1/8, 1/12, 1/16, 1/24, 1/32, 1/48, 1/64. The +/- buttons or the keypad can be used to scroll through the choices. The keypad buttons 0-9 can also be used to select the click value directly, with 0=1/2 and 9=1/64. Additional click pages can be accessed with the page up and page down buttons. Pressing the page up button once moves the cursor to the RECORD CLICK function, as follows:



This function determines whether or not the metronome will click while in record mode. The default setting is ON, but it can be changed with the +/- buttons. The next page has two more click parameters which are accessed with the page up and page down buttons. They display as follows:



The top function determines whether or not the metronome will click while in PLAY mode. The +/- buttons can be used to change the function on or off, respectively. The default setting is PLAY CLICK OFF. The last function determines the number of clicks that will be counted down when entering record. It can be set from 0 (OFF) to 99. The default is 4.

21 TAPE

The TAPE button is used to access the tape interface features of the MMT-8. This allows the user to save and retrieve sequence data with an ordinary cassette recorder. Pressing and holding the TAPE button results in the following display:



Pressing the RECORD button initiates the save to tape. Both buttons can now be released, since this operation may take over two minutes, during which the display will read:



The display shows the current part or song being output. This display will advance until all data is output. Pressing the STOP/CONTINUE button will abort the operation. Before pressing RECORD, the page up and page down buttons can be used to access the other five tape pages. They are as follows:











In all five of these pages, pressing RECORD initiates the operation. The verify function is used to ensure that the data just recorded to tape is good. LOAD ALL PARTS & SONGS FROM TAPE loads the entire sequence memory with the data on tape. LOAD ONE PART FROM TAPE and LOAD ONE SONG FROM TAPE allow a single part or song to be loaded from a tape. The keypad can be used to select the desired number. For operations involving output to tape, after pressing RECORD the display will change to the following:



When the initial tone on the tape is detected, the display shows (depending on the page shown when RECORD was pressed):









For sending data to the MIDI OUT port, pressing RECORD from the SEND ALL PARTS & SONGS OUT MIDI page results in the display showing:



Again, the RECORD and TAPE buttons can be released, and the display will continue until the operation is complete, with the currently loading or verifying part or song number being shown in the display. When loading one part or song, the display will continue to show the selected part or song number in the upper display. When sending out MIDI data, the display shown above will remain until the data has been sent out. After completion of the tape functions, the display will return to its previous state (select part or select song). If an error is encountered while loading from tape, the display will show ERROR as soon as it occurs, for example:



The tape will attempt to continue to load, but it is possible that the data will be corrupted and therefore unusable.

During any of the tape operations (but not the send MIDI function), the STOP/CONTINUE button can be used to abort the operation. The display will show:



When loading in all parts and songs, aborting the tape may leave unusable data in memory. When loading one part or song, aborting after the selected part or song has passed will not cause any problems.

22 Storing to disk using MIDI system exclusive data dump

The MMT-8 send to MIDI function is provided so that the data can be stored on a computer, a Yamaha MDF-1 (MIDI Filer) or a Yamaha DX-7IIFD. The data is sent out as one block of system exclusive data, with the length being determined by the amount of memory being used. If using the MIDI Filer, no more than 85% of the memory should be full or else the data will be too large for the MIDI Filer's buffer. No more than 25% of memory should be full when saving to a DX-7IIFD or its buffer will be filled as well. The MMT-8 will automatically receive MIDI system exclusive sequence data from any of these devices without having to select a specific page. If the system exclusive data starts to come in, the display will read:



This display will remain until the data has been completely loaded, after which the MMT-8 will return to song 99. Note that any time the MMT-8 receives sequence data from MIDI, any data previously in memory will be lost.

23 Syncing the MMT-8 to tape

It is possible to sync the MMT-8 to a tape recorder with the help of the TAPE SYNC mode. In this mode, the MMT-8 reads a master clock pulse from a track of a tape recorder, which keeps all of the sequencers/drum machines perfectly in time with the recorded information on the tape machine. This method has the advantage of eliminating the need to print drum machine or synthesiser parts on tape, since you can use the master clock recorded on tape (or "sync track") to trigger the drum machine and synthesisers via the sequencer.

23.1 Recording the sync tone

Before recording any audio information on the tape machine, you must lay a "sync tone" down on one track of the tape machine. This is usually done on an outside track (track 1 or 8 on an eight track machine; track 1 or 16 on a sixteen track machine, etc.) to keep the crosstalk to a minimum.

1. Connect the TAPE OUT jack of the MMT-8 to the input of the desired track of the tape machine.

2. Press PLAY on the MMT-8, then adjust the level of the track so that it reads approximately "0 VU".

3. *You must select a tempo for the song on the MMT-8 at this time as it cannot be changed later.*

4. Begin recording on the tape machine.

5. Press PLAY on the MMT-8. Allow the MMT-8 to play through its entire song before stopping the recording. When the song has ended, stop the recording and rewind the tape machine. You are now ready to trigger the MMT-8 from the sync tone that you just recorded.

Note:

- There is no TAPE SYNC OUT switch as this is always active.
- Keep the sync signal at about 0VU in order to avoid dropouts. If the MMT-8 does not see the sync tone for a half second, it will assume that the sync tone has ended and will go into STOP mode.
- If possible, do not use any noise reduction, EQ, or signal processing on the sync tone.
- Avoid recording high energy, high frequency tracks next to the sync track.

23.2 To clock the MMT-8 from tape sync

1. Connect the output of the track of the tape machine that has the sync tone to the TAPE IN jack of the MMT-8.

2. Press and hold the CLOCK button. The display will read:



3. Use the keypad or +/- buttons to select TAPE SYNC IN. The display should read:



4. Put the tape machine into PLAY. The MMT-8 will automatically start as soon as it receives the sync tone, causing any other sequencers connected to it to play. *Be careful to return to the beginning of the sync tone since the MMT-8 will automatically begin playing any time that it recieves the sync tone.*

24 START/STOP footswitch

The START/STOP footswitch jack is provided for a momentary normally open footswitch that connects the jack's tip to its sleeve (ground). While in stop, the footswitch will function like the play button and start a part or song from the beginning. While in play, the footswitch acts like the stop button, and stops playing.

25 Memory

25.1 Remaining memory

Holding RECORD and pressing LENGTH causes the following display:



This shows the amount of memory that has not been used. Note that some operations may not be possible even though it seems that there is still a small amount of memory available. This is due to the fact that the MMT-8 requires enough memory to duplicate a part before it can be recorded on, or length changed, or offset, etc. If a large part is attempted to be altered when there is not enough memory to complete the operation, the display will indicate that there is not enough memory available to complete the operation:



25.2 Clearing memory

To clear all of the MMT-8's memory and reinitialise all of its variables, turn power off, press and hold ERASE, PAGE UP, and PAGE DOWN, and turn on the power while holding these buttons down for 3 seconds.

26 Auto Locate

The MMT-8 has Auto Locate ability that allows you to go directly to a specific beat of a part without playing through the beats prior to the desired beat number.

26.1 Part Mode:

A: When the MMT-8 is in PLAY --

- Press and hold either the fast forward or rewind button.
- Enter the number of the desired beat (3 digits) using the keypad buttons.
- Release the fast forward or rewind button.
- The part will continue playing from the selected beat number.

B: When the MMT-8 is in STOP --

- Press and hold either the fast forward or rewind button.
- Enter the number of the desired beat (3 digits) using the keypad buttons.
- Release the fast forward or rewind button.
- Press the STOP/CONTINUE button to begin playing from the selected beat.

26.2 Song Mode:

Follow instructions for PART mode. The MMT-8 will Auto Locate to the desired beat in the current step (part) of the song.

27 MIDI Implementation Chart

Function		Transmitted	Recognized	Remarks
Channel	Default	1-16	1-16	User changeable
	Changed	1-16	1-16	
Mode	Default			
	Messages	X	X	
	Altered			
Note Number	True Voice	00-127	00-127	
Velocity	Note on	O	O	
	Note off	X	X	
After Touch	Key's	X	X	
	Chan's	O	O	
Pitch Bender		O	O	
Control Change	0-63	O	O	
	64-122	O	O	
	124-127	X	X	
Program Change	True #	0-127	0-127	
System Exclusive		O	O	
System Common	Song Pos	O	O	
	Song Sel	X	X	
	Tune	X	X	
System Real Time	Clock	O	O	
	Messages	O	O	
Aux Messages	Local Control	X	X	
	All Notes Off	X	X	
	Active Sense	X	X	
	Reset	X	X	

Mode 1: Omni On, Poly
Mode 2: Omni On, Mono
O : Yes
Mode 3: Omni Off, Poly
Mode 4: Omni Off, Mono
X : No

28 Troubleshooting Chart

Symptom	What's Probably Wrong	What To Do
No sound during playback of recorded parts	Didn't record.	Check MIDI connections.
	MIDI channels not properly corresponding with sound sources.	Check MIDI channel assignments.
	Tracks are muted	Check track mute selection.
Won't record after touch or system exclusive data	MIDI filters for after touch and system exclusive are enabled	In MIDI filters mode, set after touch and sysex record to on
Won't save or load to tape	Bad connections	Check wiring
	Bad tape	Use a certified data tape.
	Level of sync tone is too high or low	Try a higher or lower level to tape.
	Errors in data	Re-save the data.
Won't sync to tape.	Bad connections.	Check cables.
	Level on tape.	Set level at or near 0VU. Turn off noise reduction, if possible.

If problems aren't solved after troubleshooting and referring to the manual, consult your Alesis dealer for assistance.