

# **Brotech Electronics**

## *Mini Midi Sequencer+*

## *Mega Midi Sequencer*



## **Tablet Wireless Midi**

## *Controller - Sequencer - Player*

The Brotech Electronics Mini Midi Sequencer+ (mMS) and Mega Midi Sequencer (MMS) are tablet controlled midi players used to stream and play midi files to an external midi device. It was designed especially for use with midi enabled automated musical instruments such as a band organ. It works with any standard midi to parallel interface already built into the instrument. The system reads type 0 midi files from a local SD memory card, decodes and sequences the midi information and streams it to an external device.

The MMS hardware is controlled wirelessly via Bluetooth linked to an Android 7" tablet (8" HD tablet optional). The tablet acts as a remote directory and file name viewer and selector; select any song in the scrolling list, tap on it and it plays. The system will also play songs in a playlist that can be created using a text editor, or our companion App, *MMS Playlist Editor* - songs play in order, as they appear in the playlist – once through, sequential continuous loop, or random continuous.

The mMS+/MMS App has soft keys for Play Selection, Stop, Play Sequential, Play Random, Tempo change, and more... File and directory names are viewable in an alphabetically sorted scrolling list.

An easy way to get acquainted with how the system operates, is to view the demonstration videos on the Brotech Electronics YouTube channel. A link to the video may be found on the Brotech Electronics website, [www.brotechelectronics.com](http://www.brotechelectronics.com)

### **Mega Midi Sequencer Hardware Controls**

The Mega Midi Sequencer system consists of custom hardware (MMS), and custom mMS+/MMS application (App) running on a standard Android enabled tablet. The following describes the MMS hardware controls and features.



### **Play Mode 3 Position Rotary Control**



Auto Sequential Play - Automatically play songs sequentially in the currently selected directory. This is a stand alone local mode and does not require the tablet. Simply select Auto Sequential, and all songs in the current directory will play in sequential order. After the last song, it loops back to the first song, and repeats. It keeps playing sequentially until another mode is selected or the device is powered off.

Auto Random Play – Automatically play songs randomly in the currently selected directory. This is a stand alone local mode and does not require the tablet. Simply select Auto Random, and all songs in the current directory will play in random order. It keeps playing randomly until another mode is selected or the device is powered off.

Tablet Remote – Control the mMS+/MMS hardware with the tablet. See tablet controls for operating details

Song Interval - Sets delay or silent time between songs, 0 thru 60 seconds, used during Auto Sequential or Auto Random Play. The interval setting is checked each time between songs, and can be adjusted and set while the Mega Midi Sequencer continues to play. The delay time appears on the LCD display when the MMS is stopped. A countdown timer is visible during the interval on both the display and the tablet. Countdown can be interrupted by turning the knob fully counter-clockwise, or by pressing the STOP button on the linked tablet.

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### Mini Midi Sequencer+ Hardware Controls

The Mini Midi Sequencer+ system also has a Play Mode switch, and operates similarly to the Mega Midi system.



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### mMS+/MMS Ports

The Mega Midi Sequencer (MMS) ports are located on the left side, the Mini Midi (mMS) on the rear panel.



Midi I/O Connector: A standard midi compliant 5-pin female DIN connector. The digital output is midi standard compliant

SD Memory: A slot on the left side (MMS), front (mMS) accepts standard SD Memory card. Push to seat, depress again to release.

DC Power Jack: The DC power jack is located on the left side on the MMS, and front on the mMS. It accepts 5.5mm x 2.1mm DC barrel plug, center positive polarity.

USB (mMS only): future feature



Power Indicator and Bluetooth Status LED (mMS+ only): When power is applied this LED lights and indicates status; red = power on no Bluetooth connected, blue = Bluetooth connected; blinking red and blue = various operating and error conditions (described later).

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### General Tablet Information

The system uses a standard Android operating system tablet. It's a fully functional unmodified tablet and comes with original packaging and documentation, and the end user is encouraged to refer to this for general operation. Also, the tablet is unregistered, and can be registered by visiting the manufacturer website.

The tablet is included with the mMS+/MMS App preloaded, and the mMS+/MMS Bluetooth hardware initialized (can also be done by the end user). For the mMS+/MMS App it operates in portrait mode only.

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### **Mini+ and Mega Midi Sequencer App – Soft-Key Controls and Indicators**

After the mMS+/MMS App on the tablet is running (by tapping on it on the Tablet home screen), and a connection is made to the mMS+/MMS hardware, the following controls, buttons, and displays are available.



*Mega Midi Sequencer Soft-Keys*

**STOP:** This button stops the currently playing midi song, and/or terminates the autoplay. It silences all notes.

**PLAY SEQUENTIAL CONTINUOUS:** Play all songs in the current directory in sequential order. When it finishes playing the last song, the mMS+/MMS loops to the first song and begins again. It keeps playing until STOP.

**PLAY RANDOM CONTINUOUS:** Play all songs in the current directory in random order. Will play until STOP.

**BTCONNECT:** When tapped lightly this reasserts the Bluetooth connection. When pressed and held, it restarts the program to the initial Bluetooth device linking screen.

**Scrolling Song and Directory list:** This is a list of directories located on the SD Memory card {Root} and midi song file names in the currently selected directory. The user scrolls through the list vertically to select songs to play or a directory to switch to.

**Selection Bar:** When one taps on a scrolling list entry it is copied to this yellow bar. When the bar is then tapped, the bar turns green (showing it's active), and the song plays or the hardware changes directories and uploads a new scrolling list. During automatic play, the selection bar will be green and show the delay countdown and the next song to be played, or the currently playing song.

**BPM up/down:** Two skeleton buttons are available labeled *BPM UP* and *BPM DN* for adjusting tempo, faster or slower (up or down). They only work when a song is playing. The tempo change is briefly shown on the selection bar. Each tap is 1 BPM change, plus or minus. It is not permanent and only affects the currently playing song.

**DLY up/down (mMS+ only):** For the mMS+ the two skeleton buttons are dual purpose. When a song is not playing they are labeled *DLY UP* and *DLY DN*, and are used for adjusting in-between song interval delay, longer or shorter (up or down). The change is briefly indicated on App selection bar. Each tap is 1 second change, plus or minus. The change will be applied to all subsequent autoplay, but is not permanent and will reset to default when the mMS+ hardware is reset or powered off. The default delay time can be set by the user in the configuration file.

DIR: This information cell shows the currently selected directory or playlist. It cannot be pressed, and is updated automatically upon start-up and change directory.

Bluetooth Status light: when Bluetooth is active and connected, a blinking green indicator dot is displayed on the BTCONNECT button. When Bluetooth is disconnected or not active, this light changes from blinking green to blinking red. If Bluetooth had been connected and disconnects, the App will try to reconnect automatically.

Status Messages: status messages appear from time to time briefly on the display and then disappear.

Tablet sleep mode: After initializing and running the mMS+/MMS App, the user might select Play Sequential or Random continuous using the App soft buttons. If set to play continuous in this way, the tablet can enter a sleep state (or even be shut off) and the mMS+/MMS will continue playing automatically in that current play mode. When the tablet wakes again the Bluetooth automatically reconnects without user intervention, unless the tablet has been powered off completely. In that case the App must be restarted, and Bluetooth connection reestablished manually.

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## **Operation**

### **Midi File Storage and Organization**

Midi Files are stored locally on the mMS+/MMS SD memory card. The end user adds directories and songs to the memory card using a personal computer and SD memory card adapter. Multiple directories can be created in the {/Root} directory, and the user can add midi files to these directories. One can have a basic directory such as MAIN\_DIR, where all songs are kept; or theme named directories such as PATRIOTIC where all patriotic songs are kept; TEST\_DIR, where test midi files might be kept, and etcetera. Any directory name is fine, conforming to standard file and directory naming conventions. There is no limit to the number of directories, and each directory can contain up to 1500 midi files (any songs beyond 1500 are ignored)

### **File and Directory Structure**

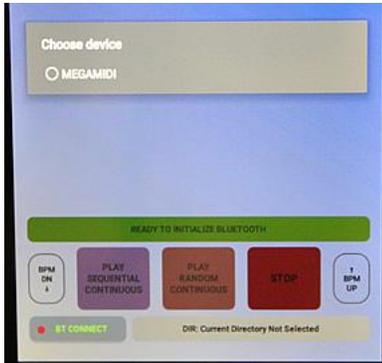
The SD Memory card is formatted FAT32. The directories and midi filenames can consist of any combination of not reserved alphanumeric text in accordance with standard file naming convention. Directories can only exist in the {/Root} directory - subdirectories off existing directories are not allowed. Example;

Allowed	/MAIN_DIR
Allowed	/TEST_DIR
Not Allowed	/MAIN_DIR/SOME_OTHER_DIR
Not Allowed	/MAIN_DIR/SOME_OTHER_DIR/SOME_OTHER_DIR_2

Midi files can appear in any of the directories and the {/Root} directory. Other files can also appear on the memory card, but only {/Root} directory names and filenames ending in “.mid” and playlists ending in “.lst” and the configuration file “*MegaMidiConfig.txt*” are used - and all other files are ignored.

The maximum filename length = 88 characters, and the maximum directory name length = 88 characters. Files or directories with names greater than 88 characters are ignored.

### **Connecting to the Tablet**



When first running the mMS+/MMS App on the tablet, the user must select the Bluetooth Device to connect to; it is usually – *MEGAMIDI* for the MMS, and *MINIMIDI +* for the mMS+. The mMS+/MMS hardware the *Play Mode* must be set to *Remote*. Naturally, the mMS+/MMS hardware must also be powered on.

Immediately after selecting the Bluetooth device and establishing connection, all midi and playlist filenames in the default directory, and all directory names in the {/Root} directory are uploaded to the tablet. This happens very quickly at 115k baud. *Only the file and directory names* are uploaded and not the actual and complete midi song files - *only the names*. After connecting and automatically uploading the directory and file names, a scrolling list is created on the tablet.



After connecting or changing directories, all mid and playlist filenames are uploaded from the mMS+/MMS hardware to the tablet, and a scrolling song list is created

### Standard Remote Tablet Control

In standard remote tablet play mode, the tablet acts as a remote directory and midi file name viewer and selector. The directory and filenames are shown in a sorted vertical scrolling list on the tablet, with directory names always listed first, any playlist names listed second, and midi file names shown last.



One can scroll through the list and select and play any song by tapping on it. In a similar way, one can select a new directory by tapping on it (equivalent to changing directories on a computer). Whenever a new directory is selected, a new scrolling list is automatically created with only the midi and playlist file names found in that directory. For example, if the user selects *TEST\_DIR*, a new scrolling list is created showing only the midi songs and playlists in the *TEST\_DIR* directory.

Any individual song can be selected and played. To do so, one taps on the song in the scrolling list and it is immediately copied to the yellow Selection bar. Tapping on the yellow bar sends the file name to the mMS+/MMS hardware, and it begins playing it. As this happens, the selection bar text and background simultaneously turns bright green indicating that the song is playing.

Similarly, one can select a directory from the scrolling list, and it is copied to the selection bar. Tapping on the bar causes the mMS+/MMS hardware to change directories. Immediately a new scrolling list is created on the tablet showing all of the midi songs in the new directory.

If one selects a playlist, then only the songs in the playlist are shown in the scrolling list, appearing in order as they appear in the playlist.

### Soft-Keys Sequential Continuous Play and Random Continuous Play

Besides selecting and playing individual songs, one can press the tablet soft keys *PLAY SEQUENTIAL CONTINUOUS*, or *PLAY RANROM CONTINUOUS*. When tapped the playing mode will be indicated with bright green text, and the mMS+/MMS hardware will continuously play all files in the current directory until the *STOP* button is pressed. The song name of each new song that is playing is displayed on the Selection Bar. Before each song plays, if a delay is set a countdown to next song play will be indicated.



Play Continuous Random – the currently playing song is displayed on the *Selection Bar*

### Tempo Change using Soft-Keys BPM UP and BPM DN

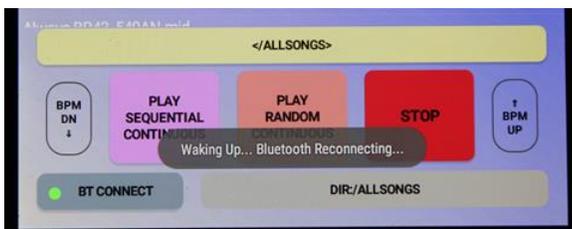
When any song is playing, the user can press the BPM UP or BPM DN soft keys on the tablet to change the song tempo up or down (faster or slower). Each soft-key press is a change of 1 BPM, plus or minus, and is briefly display on the selection bar. The tempo change is not permanent and only affects the currently playing song. If a tempo change has been made and the song is stopped and started again, the original tempo is used.

### Auto Play and Tablet Sleep Mode

When the mMS+/MMS hardware is set by the tablet into any of the playing modes; play a song, *Random* or *Sequential Continuous* auto play, the tablet can be put into sleep state to conserve battery power and the mMS+/MMS hardware will continue playing uninterrupted in the current play mode.

During sleep there is no active communication between the tablet and the hardware. Upon waking the tablet, the Bluetooth automatically reestablishes connection without user intervention. It takes a few seconds to completely wake-up and reconnect and the user must wait until status message *Bluetooth Connected Successfully*, before pressing any of the soft keys.

Also, it may take one song cycle (one song finish playing, and then the next song) to see the currently playing song refreshed on the tablet selection bar.



Tablet waking and automatically reconnecting

### mMS+/MMS Stand-Alone Operation – without Tablet

The mMS+/MMS hardware can play in a very limited way autonomously without the tablet. Simply power on the mMS+/MMS, and using the *Play Mode* selector control select either of *Auto Sequential Play* or *Auto Random Play*. The mMS+/MMS hardware immediately begins playing all songs in the current directory in the selected mode. It will play continuously until the selection is reset to Remote and the song ends. For sequential autoplay, the mMS+/MMS sequences through all of the midi files, and when finished starts over again. If there is an interval delay set, the play can be aborted before starting by turning the selection knob to remote.

#### MMS (only) Song Interval Control

Set this control when the MMS is not playing a song to any value 0 thru 60 seconds, and it will insert silence between automatically playing songs. The interval is checked each time before a song begins to play. A countdown timer is displayed on the tablet and MMS LCD screen to alert when the next song is about to begin. As it's counting down, the user can quickly turn the knob counter-clockwise to terminate the delay early and begin playing. This is not a precise control, and so there are no time markings indicated.

#### mMS+ Song Interval Control

On the mMS App home screen, when no song is playing the two skeleton buttons are labeled *DLY UP* and *DLY DN* and are used to adjust the in-between song interval time – the silence between songs during auto play. The range is 0 thru 60 seconds. Tap the DLY UP key to increase the delay, and DLY DN to decrease it, in 1 second increments. The change is briefly indicated on App selection bar. The change is not permanent and will reset to default delay anytime the mMS hardware is reset. The default delay can be set by editing the configuration file item, *PlayDelay*.

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### Playlist – Playing Songs in a Playlist, and Creating a playlist

#### Playing Songs in a Playlist

The mMS+/MMS can play songs in a playlist that the user can create. From the scrolling list select an existing playlist and tap on it, and it is copied to the yellow selection bar. Tap on the bar and the playlist opens and a new scrolling list appears showing all of the files in the playlist. In addition, the lower right directory field now shows the playlist filename as the selected directory, *LST:/some\_list\_filename.lst*. The new scrolling list shows the playlist songs listed in order as they appear in the playlist – the list is not sorted.

At the beginning of the midi file list in the scrolling list is the playlist name prefixed with *PLAY LIST:*. Tapping on this will copy it to the selection bar. If the selection bar is tapped the mMS+/MMS will play through all songs in the list one time, and in the order that they appear in the list. It stops playing at the end of the last song. If one instead selects *Play Sequential Continuous*, then the list is played from beginning to end, and then loops back again to the beginning and keeps playing. If one selects *Play Random Continuous*, then all songs in the list are played in random order until the *STOP* button is pressed.

#### Creating a Playlist

A playlist can be created using the MMS tablet and our *MMS Playlist Editor* App, or by using a personal computer. These instructions are for using a personal computer. The MMS Playlist Editor App has its own instructions.

The playlist can be written using any text editor such as Notepad, but whatever program is used it must be a basic text editing program without formatting. The playlist is stored on the local SD memory card in any directory including the *{/Root}* directory. Create a list using a personal computer, and save it to any directory on the SD memory card. Then restart the mMS+/MMS hardware, link the tablet and the list may be opened and played.

Each line in a playlist can contain 1 complete midi song name, and end with a standard carriage return. There can be no other alphanumeric characters on the same line as a song name. Each song name must be complete including “.mid”, and including THE DIRECTORY LOCATION on the SD memory card. If a song name is inaccurate, or

not found in an indicated directory, the mMS+/MMS hardware will skip playing it. For example, this is a complete song name;

Lila W125 3132-02N.mid

... and this is an incomplete song name because it is missing the ending “.mid”, and it will not play;

Lila W125 3132-02N

... and this is a complete song name that has extraneous characters on the same line and it will not play;

Lila W125 3132-02N.mid (I really like this song)

Furthermore, if this song is located in directory MAIN\_DIR, then it must appear in the playlist file as

MAIN\_DIR/Lila W125 3132-02N.mid

Or

/MAIN\_DIR/Lila W125 3132-02N.mid

If it is missing the directory reference, it cannot be found and cannot be played. (As a note, the forward slash at the beginning of a song name indicates that it is located in the {/Root} directory. It is unnecessary to include this reference because the mMS+/MMS hardware always automatically adds this reference)

A properly formatted playlist might therefore look like this;

Early In The Morning Waltz W125 313403MN.mid

MAIN\_DIR/Lila W125 3132-02N.mid

BLUESRAG/Bull Frog Blues W125 3035-06N.mid

IRISHDIR/My Wild Irish Rose Waltz W125 3103-09N.mid

PATRIOTI/PTRC Under The Double Eagle March W125 3143-060.mid

Notice that except for the first line, all the songs begin with their directory location. The first line implies that the song exists in the {/Root} directory.

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## Operating Tips

**Reconnecting Bluetooth:** Press and hold the BTConnect softkey on the tablet to restart, reselect, and reconnect the Bluetooth link. Example: if after connecting, the mMS+/MMS hardware is powered off and powered on again while the tablet App is running, press and hold the BTConnect button to go to the Bluetooth link screen. This button may also be tapped once quickly to reassert the Bluetooth connection. When tapped lightly it verifies Bluetooth link, and if disconnected tries to reestablish the connection.

**Removing the SD Memory card while operating or playing a song:** Whenever the SD memory card is removed and replaced while the mMS+/MMS hardware is powered on, the hardware will go through a soft-reset – the mMS+/MMS firmware will begin again as though first powered on. However, soft reset does not change the status of the Bluetooth, and so if it was linked to the tablet, it will remain linked during the soft reset. While the bluetooth is unaffected by a soft reset, the tablet and mMS+/MMS still need to be resynchronized – do so by selecting the {/Root} or any known directory. Do not remove the SD card during active communication directory change, which might cause the App to freeze, requiring a manual reset.

**Autoplay delay:** During autoplay, new songs will begin playing after the Song Interval Timer counts down to zero. Once started, rotating the Interval delay knob fully counter-clockwise will terminate the count-down early, and the song will play immediately. If linked to the tablet, pressing the STOP button will terminate play. If linked to the tablet, the countdown will appear on the selection bar with the next song to play indicated.

**Tablet Sleep Mode:** After wirelessly linking the tablet and Bluetooth, the tablet can be put into sleep mode to conserve battery power. When sleeping there is no active communication between the tablet and mMS+/MMS. When the tablet wakes it will take a moment for the communication link to be automatically reestablished. Avoid pressing any of the softkeys until the BTConnect status indicator is again blinking green.

Active Communication Interruption: This system relies upon active communication between the tablet and the mMS+/MMS hardware. If the communication link is broken during directory change command, the App or mMS+/MMS hardware or both may freeze, and either or both may have to be reset or restarted. If a directory change has been initiated, let the process complete before changing the Bluetooth status, such as putting the tablet to sleep.

Filename Transfer Speed: Transferring filenames to the tablet should take approximately 4 seconds per 500 songs with average filename length of 37 characters. If the transfer takes much longer than this, try reformatting the SD memory card, using FAT32 file system.

Tablet and mMS+/MMS synchronization: After linking the tablet and MMS+/mMS hardware, if the hardware is powered off and on again, even though the bluetooth may relink automatically, it will become unsynchronized with the tablet, and so the tablet list may not reflect correctly files on the SD memory card. To resynchronize, select the /{ROOT} directory on the tablet, or press and hold the BTConnect button to relink the Bluetooth from the App start screen.

mMS+ Status LED: The LED on the mMS generally indicates power on (red) or power on and bluetooth linked (blue). The LED blinks status information, on boot – blink 2, then 3, then 4 times, as it initializes. When linked to the tablet, each soft-button press causes the LED to blink indicating active connection. Repeated pattern blinking during boot means there is an SD memory card error: check the card and correct.

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### **mMS+/MMS Midi Sequencer Configuration File**

The mMS+/MMS can use a configuration file to set certain defaults. The configuration file filename is, *MegaMidiConfig.txt*, and must be located in the {Root} directory only. If the configuration file is missing, then defaults are automatically used.

The format of this file is very specific; each keyword must be followed by -> and then the variable, terminated with a semicolon. Any text following a semicolon is ignored. If you are using the configuration file, but want some features to use default settings, you can force the use of a default by beginning the assignment line with a semicolon. Only edit the configuration file with a basic text editor that does not include formatting, such as Notepad.

The configuration can set the power-on default directory, such as “MAIN\_DIR”. There are also audible status cues available that the mMS+/MMS has a connected instrument play during change directory and upload file names, SD memory card error, and midi file error. Each cue uses a single playable note on the instrument.

```

; Mega and Mini Midi Sequencer (MMS/mMS) Configuration file - 2017-02-27
;
; Edit this file using a text editor to set user preferences
; If this file is missing, or a keyword is missing, or not properly formatted, default settings are used
; Each assignment MUST END with semi-colon!
; Keep 1 space only before and after -> (example: "keyword -> assignment" and not "keyword->assignment" and not "keyword  ->  assignment")
;
; keywords can be blocked by beginning the line with a semi-colon. If blocked, default settings are used
;
; The ToneStatus notes will not play by default. If you want to use this audible feedback feature, set tonestatus to playable notes
; (most useful when set to different notes)
;
; Note assignments are of format channel:note, where channel = 1 to 16, note = 0 to 127. If an invalid channel or note is assigned, the
; default will be used
;
; For Number Of Channels, it is usually not necessary to declare and set this. If set, enter the highest channel number to be used, and not
; the number of channels used. So, if you use channels 1,2,3, and 10, set this to 10 and not 4.
;
; For the Declenche or General Cancel feature, set to instrument declenche note, and it will be active. If active, it will be
; sent after an all notes off event (such as tablet STOP), timed as - 100ms delay, 1sec note on, then note off, effectively resetting
; the registers. However, it is usually not necessary to set this feature because songs usually reset the registers before play begins.
; We recommend not using it if it's not necessary, as it will add a delay the STOP time
;
; For All Notes Off Mode, setting 1 should work for all applications, and is the default setting. It is only used when STOP button is pressed
; to artificially turn off all notes that may be left on when a song is abruptly stopped. Alternately one can try mode 2 or 3, which are
; built-in midi commands, but some midi to parallel boards may not recognized these commands. If either can be used, the all notes off STOP
; modes 2 or 3 will usually be more efficient than Manual Mode 1
;
; There are two settings, PlayDelay and Autoplay, that apply to the Mini Midi Sequencer hardware only, and are ignored by the MMS hardware.
;
; Autoplay, Mini Midi hardware only - This can be used for quick play midi song testing, as a default play setting, or as a failsafe in the
; event the tablet is not available for controlling the hardware. The format for this setting is Sn or Rn where,
; S = automatic continuous sequential play; R = automatic continuous random play; n = 0 thru 9 minutes.
; Example: R8 = begin automatic continuous random play after 8 minutes;
; Example S0 = begin automatic continuous sequential play after 0 minutes, i.e. - immediately. This is useful for a quick song test.
; The autoplay feature disables once a tablet connects to the hardware.
;
; Avoid using any of the NOT necessary and/or NOT recommended settings, as these will slow MMS performance, and are most often not necessary
;
DefaultDirectory -> MAIN_DIR;          This is the MMS power-on boot directory. Default = / (/{ROOT})
;ToneStatusBegin -> 1:93;             Status Tone for begin change directory and/or filecount and/or upload filenames to Tablet. Default = 0:0
;ToneStatusEnd -> 1:94;              Status Tone for end change directory and/or filecount and/or upload filenames to Tablet. Default = 0:0
;ToneStatusFileError -> 1:56;        Status Tone for general file or directory read error. Default = 0:0
;ToneStatusMidFileError -> 1:43;     Status Tone for incorrect format midi file - must be properly formatted type 0. Default = 0:0
BootAllNotesOff -> YES;              On boot, turn all notes off. Sets all notes OFF on all active channels. Can be YES (Default) or NO
NumberOfChannels -> 16;              Highest midi channel to be used. numbers 1 - 16 allowed. Default = 16
AllNotesOffMode -> 1;                1 = Manual Normal, 2 = midi All Sounds Off (midi 120), 3 = midi All Notes Off (midi 123). Default = 1
DeclencheNote -> 0:0;                If active, always send Declenche note last after mid-song STOP. Declenche is off by default = 0:0
;
; the following two are configuration settings for the Mini Midi Sequencer only
;
PlayDelay -> 4;                       Set the autoplay in-between song delay in seconds, 0 - 60 allowed. Default = 4
Autoplay -> NO;                       Play all songs in current directory without tablet connection. See above explanation. NO = disabled (Default)
;
; the following configuration settings are not generally used, and not recommended
;
NotesOffAllSongs -> NO;               Ensure silence between all songs. Usually NOT necessary and NOT recommended. Can be YES or NO (Default)
DisplayUserSettings -> NO;           Diagnostic Tool to display all user settings on boot. Usually NOT necessary. Can be YES or NO (Default)
DoubleOff -> NO;                     Adds timing delay to Notes Off all modes. Usually NOT necessary and NOT recommended. Can be YES or NO (Default)

```

### *Sample Configuration File*

## **Configuration File Keywords**

**DefaultDirectory:** When the mMS+/MMS powers-on, the default directory is normally {/Root}. This can be changed to any directory. The format is, DefaultDirectory -> Some\_Directory\_Name.

**ToneStatusBegin:** When the mMS+/MMS powers-on or is directed to change directory, it can briefly play a single note, an audible confirmation that the mMS+/MMS and midi instrument are both active. The format is, ToneStatusBegin -> nn:nnn, where nn = midi track 1-16, and nnn = note 0-127. Example: on our test organ, 1:93 causes a single snare drum strike. Default is 0:0 = disabled.

**ToneStatusEnd:** This complements and follows the ToneStatusBegin setting. When the action completes, such as change directory, the ToneStatusEnd plays a single note, providing an audible confirmation of the activity end. The format is, ToneStatusEnd -> nn:nnn (format same as above). Example: on our test organ, 1:94 causes a single cymbal strike. Default is 0:0 = disabled.

**ToneStatusFileError:** if the mMS+/MMS detects an SD card error, or SD card directory or file read error, a repeating error note is played to the instrument. The format is, ToneStatusFileError -> nn:nnn (format same as above). The default is 0:0 = disabled.

**ToneStatusMidiFileError:** if the mMS+/MMS detects a problem with a midi file format, or the file is otherwise corrupted, a repeating error note is played to the instrument. The format is, ToneStatusMidiFileError -> nn:nnn (format same as above). The default is 0:0 = disabled.

**BootAllNotesOff:** on mMS+/MMS power-up, it will automatically turn all notes off on all active channels; notes 0 thru 127, and channels 1 thru 16. The assignments are YES = default, or NO

**NumberOfChannels:** the user can restrict the number of channels that the mMS+/MMS will work with, anywhere 1 thru 16 inclusive. The default is 16. It is usually not necessary to set this

**AllNotesOffMode:** During a mid-play STOP command, any playing notes are silenced using any of 3 All Notes Off modes; 1 = normal manual mode, 2 = midi command 120 *All Sounds Off*, 3 = midi command 123 = *All Notes Off*. If either of 2 or 3 can be used, there is a slight efficiency gain silencing all notes. Some midi to parallel controllers might employ these built-in midi commands. Default is 1 = manual

**DeclencheNote:** During an abnormal STOP mid-song play, it might be important for some instruments to reset the *Declenche* or *General Cancel* feature on their instrument, though it is usually not required because songs should reset the declenche at the beginning of each new song play. The choices are 0:0 = default disabled, or declenche note channel->note assignment, format nn:nnn (format same as above). The declenche event plays at the very end of a STOP command, timed as - 100mS delay, 1sec note on, then note off, effectively resetting the registers. We recommend not using this feature if it's not necessary, as it will delay the STOP time.

**PlayDelay (mMS+ only):** Set the autoplay in-between song delay (silence) in seconds, 0 - 60 allowed. Default = 4

**NotesOffAllSongs:** Ensure silence between all songs. Usually NOT necessary and NOT recommended. Can be YES or NO (Default)

**DisplayUserSettings (MMS only):** Diagnostic Tool to display all user settings on the LCD during boot. Usually NOT necessary, and will slow boot time. Can be YES or NO (Default)

**DoubleOff:** Adds timing delay to Notes Off all modes. Usually NOT necessary and NOT recommended. Can be YES or NO (Default)

**RenameBT:** (special order feature, not available on all units) Units are shipped with Bluetooth already named MEGAMIDI or MINIMIDI. With this option the end user can rename it, which is especially useful for multiple instrument use. The name can be any combination of alphanumeric characters up to 30 characters in length. After renaming, on the tablet go to Bluetooth settings, and "Forget" the current Bluetooth name. On the tablet, turn the Bluetooth off and on again, and then select *Pair a Bluetooth Device*, or *Search for a new Bluetooth device*. After renaming the Bluetooth, it is strongly urged that the rename keyword be disabled by beginning the line with a semicolon.

## Miscellaneous

### Bluetooth

The standard Bluetooth RF range is at least 10M, or 30 feet. When changing directories or when first powering on a lot of information needs to be sent from the mMS+/MMS hardware to the tablet. The tablet must be in range and the signal communication strong for this to work reliably. So at an extreme range, or in an electrically noisy environment, there may be some interference that would prevent the smooth communication between mMS+/MMS and tablet. The user is encouraged to be within clear site range of the mMS+/MMS custom hardware when first running the App or when changing directories.

When connecting the tablet to Bluetooth, MEGAMIDI or MINIMIDI+ should appear as one of the recognized devices. If the tablet has in some way been reset or Bluetooth devices has somehow been lost, go to the wireless configuration screen on the tablet, and search for new Bluetooth devices. With the MMS on, it should find device MEGAMIDI, or MINIMIDI+ for the mMS+. Select this device and it will ask for a pass key – the key is located on the serial tag of the mMS+/MMS.

### MMS LCD Display Status Messages

The MMS display is configured 4 rows by 20 characters. At various times it displays current directory, current selected song name, current song number, complete text status messages and acronym status messages. The acronyms are described as follows;

SP: = Sequential Play – MMS is currently in Sequential Play mode

RP: = Random Play – MMS is currently in Random Play mode

P: = Playing – MMS is in Tablet Remote play mode

!NF = File not found – The MMS cannot locate the file - file is Not Found. This error message may be accompanied by an error tone.

CD: = change directory The current directory being processed

!D: = open directory fail – The MMS cannot find or open the named directory. This error message may be accompanied by an error tone.

DIR = Current Directory – The currently selected directory is displayed locally as well as on the tablet. For local LCD display, the displayed directory occupies 1 line, and will be truncated >16 characters. Longer directory names can be used but only the first 16 characters will be displayed.

Midi file filename – The currently playing or selected midi file is shown on the last 3 rows of the display. The filename will be truncated at >57 characters. Longer filenames can be used but only the first 57 characters will be displayed.

BPM – Beats per minute of the currently playing song (visible when using tablet BPM UP/DN keys)

Delay – Between song silence during autoplay (visible when not playing a song)

### mMS+ System Status Messages

System status messages will either briefly appear on the selection bar, or in a disappearing balloon window.

### Other

Maximum midi filename length = 88 characters (will ignore longer named files)

Maximum directory filename length = 88 characters (will ignore longer named directories)

Maximum number songs in any single directory = 1500 (will ignore files over 1500)

Midi type song = will only play midi type 0 songs

SD memory = SDHC, maximum 32G, speed class at least 4 (as tested)

A/C adapter = 9VDC/1A, center positive, 2.1 x 5.5mm barrel plug

Satisfaction Guarantee:

We want the Mini/Mega Midi Sequencer product to work for you the way you need it to, understanding that different applications may require different solutions. The customer has up to 30 days, to evaluate and try the system, and if it doesn't meet your requirements you can return it for credit. The items must be returned in like-new condition. Contact us first for a return authorization (RMA). The customer pays for UPS tracked and insured shipping. Under these conditions and upon receipt of the returned hardware, a full refund will be provided, less the shipping charges. The tablet cannot be returned if it has been registered in an end user Amazon account. In that instance, we will only refund the cost of the custom hardware.

Product Warranty:

The Brotech Electronics Mini/Mega Midi Sequencer custom hardware is guaranteed free from defects in material and workmanship for a period of 1 year from date of purchase. In the unlikely event that you experience a problem, contact us and we'll try to find a resolution. If the product needs to be returned for repair, contact us first for a return authorization (RMA). The customer pays for UPS tracked and insured shipping one way. Brotech does not warranty the tablet. Any tablet warranty or operating problems must be resolved through the manufacturer directly.

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