

# **Ringing Melody**

# **Authoring Guidelines**

**for**

## **MA-2 Authoring Tool ATS-MA2-P**

Ver. 1.0.0

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YAMAHA Corporation

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## ***Revision history***

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# 1. Overview

This document specifies the guideline at the time of authoring the ringing melody contents for MA2 using ATS-MA2-P.

## 2. Note of SMF (Standard MIDI File) Authoring

### 2.1 SMF format

---

About the conversion from SMF to the ringing melody format, only SMF Format 0 can be used. When you edit a file using a general sequencer, please specify and save the file as SMF Format0.

### 2.2 Polyphony

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It is possible to generate 16 tones as maximum. (when all voices have 2-operator composition)  
When using the voices in 4-operator composition, the number of enabling pronunciation will decrease.

### 2.3 MIDI channel which can be used.

---

All of the 16 MIDI channels can be used.

### 2.4 The usable preset voices

---

Normal voice:	128 × 2 tones.
Drum voice:	61 × 2 tones.
are available.	

### 2.5 The usable tones number

---

The voice of 2-operator composition can be used to a maximum of 16.  
Moreover, when voices are made only 4-operator composition, a maximum of 8 can be used.  
The total amount of voice can be found by the “Program change number of the normal channel + the kinds of note number of the drum channel”.

### 2.6 The usable of a pitch extent

---

Normal voice :	MIDI note number 21 ~ 108
Drum voice :	MIDI note number 24 ~ 84
ADPCM :	MIDI note number 0 ~ 12, 92 ~ 127

## 2.7 Setup data

The section which can be inserted a setup data is from one measure to a START point (3.18 Gue Point). Into this section, ChannelReserve, BankSelectMSB, BankSelectLSB, ProgramChange, MasterVolume, ChannelVolume, ChannelPan, and Modulation are inserted. (The detail about each message is explained at Chapter 3).

When inserting the following messages, please perform operations in accordance with following order.

“ChannelReserve → BankSelectMSB → BankSelectLSB → ProgramChange”.

Surely required messages are ChannelReserve and ProgramChange.

The other message is set up by the default value.

## 2.8 Default value

The default value is as follows.

	MIDI Channel 0 ~ 8, 10 ~ 15	MIDI Channel 9
BankSelectMSB	122	123
BankSelectLSB	0	
ChannelVolume	99	
ChannelPan	64 (Center)	
Modulation	0	
Master Volume	127	

When the START point is not setup, the START point becomes a head of first measure, and the Setup section will not exist. In this case, please insert the above mentioned message in the head of first measure by Duration 0.

## 2.9 Tempo

The speed of Tempo designated by the SMF is reflected.

If the Tempo is not designated, it is interpreted by a quarter note = 120

It also supports a Tempo change during music.

## 2.10 File size

Ringing melody content has restriction in the file size which can be used at mobile phone according to distribution conditions etc. Please create SMF, checking the size of outputted file (not exceeding 10 K bytes as a rough standard). Especially Pitch bend (3.14), the event size of SMF is changed to several times the amount of data, so be careful when using it.

### 3. MIDI events to use

MIDI events other than the following cannot be used. A warning will be issued if those events are used.  
In addition, there are some events which have to be specified.

#### 3.1 Channel Reserve (0xBn 0x37(55) ss)

---

n :	MIDI channel	0~15 (0x0 ~ 0xF)
ss :	Number of channels to reserve	

---

The Control change 55 is used.

It is a Control message which is peculiar to ATS-MA2-P. The meaning differ by a Normal Channel (BankSelectMSB = 0x7A) and a Drum Channel (BankSelectMSB = 0x7B) .

The inserting position: Please be sure to insert into the head of each MIDI channels (1:1:0).

A warning will be displayed when this message is not present in a MIDI channel that is used. In the case of a normal channel, this specifies the number of MA2 channels to be allocated.

In almost all cases, the numbers are the maximum simultaneous sound generation of the channels.

When using a long released voice effectively, please specify a number which exceeds the maximum simultaneous sound generation.

When a short released voice is being used, it has no effect by only securing a MA2 channel in vain.

When <Number of channels to reserve> is set up to “1”, it operates as a Mono mode, so that a Slur becomes possible. In addition, if a number more than 2 is set up, it becomes a Poly mode, and then a Slur cannot be realized.

When <Number of channels to reserve> is set up to “0”, the MIDI channels are ignored.

[Example] : If the secured channel number in the MIDI channel 1 is set up to “4”, it becomes “B0 37 04”.

In the case of Drum channel, it becomes a voice number to use in the channel. Namely, it represents a kind of Note.

[Example] : In a Drum channel,

Bass Drum L(Note#33), Snare H(Note#40),Hi-Hat Closed(Note#42),Hi-Hat Open(Note#46)

In the case of using the four kinds of voice shown above, it is expressed by “ss=4”.

Please specify “4”, even if the sound of these voices does not pronounce simultaneously.

When a wrong value of the ChannelReserve number in a Drum channel is set up, the following error message “Channel Reserve should be xx” will be displayed, and the correct values which should be inputted are also represented.

Please be sure to input a value displayed by the error message.

### 3.2 BankSelectMSB (0xBn 0x00 aa)

---

### 3.3 BankSelectLSB (0xBn 0x20 bb)

---

n :	MIDI channel	0~15 (0x0 ~ 0xF)
aa :	Bank number MSB	122 (0x7A) or 123 (0x7B)
bb :	Bank number LSB	0~9 (0x00 ~ 0x09)

The bank numbers attached to a voice which is used for aa and bb are specified.

Please use BankSelectMSB and BankSelectLSB are used as a set. In addition, please specify a ProgramChange which are mentioned further later.

The Normal channel number is BankSelectMSB=0x7A and BankSelctLSB=0x00 ~ 0x09.

The Drum channel number is BankSelectMSB=0x7B and BankSelectLSB=0x00.

When the other numbers except the number shown above are specified, a notice is carried out.

The MIDI channels 1 ~ 9 ( n=0 ~ 8), 11 ~ 16 (n=10 ~ 15) are BankSelectMSB=0x7A、  
BankSelectLSB=0x00 as default.

The MIDI channel 10 (n=9) is BankSelectMSB=0x7B、 BankSelectLSB=0x00 as default.



### 3.4 ProgramChange (0xCn pp)

n : MIDI channel 0 ~ 15 (0x0 ~ 0xF)

pp : 0 ~ 127 (0x0 ~ 0x7F) In Normal channel (BankSelectMSB = 0x7A, BankSelectLSB = 0x0 ~ 0x9)

pp : 0 ~ 9 (0x0 ~ 0x9) In Drum channel (BankSelectMSB = 0x7B, BankSelectLSB = 0x0)

The voice numbers are specified to pp. As a Drum channel, it indicates a Drum kit number.

Please insert a ProgramChange into a next of the BankSelect which is a head of each channel.

In music, the ProgramChange is not accepted during a sound generation in the channel, so that please be sure to confirm that the sound generation is terminated completely, and insert.

The program change during a music of Normal channel (BankSelectMSB: 0x7A) has restrictions that the number of operators of the last voice and the next voice should be the same. When it differs, it is warned.

4-operator voice → 2-operators voice Prohibition.

2-operator voice → 4-operator voice Prohibition.

4-operator voice → 4-operator voice OK.

2-operator voice → 2-operator voice OK.

The program change during a music of MIDI channel which use a Drum kit (BankSelectMSB = 0x7B) is prohibited. In addition, both the conversion from a Drum channel to a Normal channel and a Normal channel to a Drum channel is also prohibited.

The following list shows the preset voice banks and BankSelect,ProgramChange.

	BankSelectMSB	BankSelectLSB	ProgramChange
Normal 2-operator voice	122	0	0 ~ 127
Drum 4-operator voice	122	1	0 ~ 127
Drum 2-operator voice	123	0	0
Drum 4-operator voice	123	0	1

### 3.5 ChannelVolume (0xBn 0x07 vv)

n : MIDI channel 0 ~ 15 (0x0 ~ 0xF)

vv : Volume 0 ~ 127 (0x0 ~ 0x7F)

The Control change 7 is used.

The volume which is set up per channel is specified.

Although the volume 0 to 127 is specified, there are some ranges which the volume does not change.

[Example] : In the range of vv = 0 ~ 3, the volume won't be changed.

Please refer to the following table when designating a value.

vv	Volume (dB)	vv	Volume (dB)
0 ~ 3	- ∞	64 ~ 67	- 11.11
4 ~ 7	- 47.95	68 ~ 71	- 10.10
8 ~ 11	- 42.49	72 ~ 75	- 9.14
12 ~ 15	- 37.10	76 ~ 79	- 8.25
16 ~ 19	- 33.00	80 ~ 83	- 7.38
20 ~ 23	- 29.67	84 ~ 87	- 6.56
24 ~ 27	- 26.91	88 ~ 91	- 5.79
28 ~ 31	- 24.49	92 ~ 95	- 5.04
32 ~ 35	- 22.38	96 ~ 99	- 4.34 (default)
36 ~ 39	- 20.51	100 ~ 103	- 3.63
40 ~ 43	- 18.82	104 ~ 107	- 2.98
44 ~ 47	- 17.27	108 ~ 111	- 2.34
48 ~ 51	- 15.84	112 ~ 115	- 1.71
52 ~ 55	- 14.53	116 ~ 119	- 1.13
56 ~ 59	- 13.31	120 ~ 123	- 0.56
60 ~ 63	- 12.19	124 ~ 127	0

### 3.6 Modulation (Vibrato) 0xBn 0x01 vv

n : MIDI channel 0~15 (0x0 ~ 0xF)

vv : Depth of Vibrato 0~127 (0x0 ~ 0x7F)

The Control change 1 is used.

The depth of a vibrato which is set up per channel is designated.

The volume in the range of 0 ~ 127 is designated, however, on the interior of MA2, it is recognized by only in a five stages.

vv	Function
0	Turn vibrato off for all operators.
1~31	Vibrato will be as designated by the sound.
32~63	Add +1 to the VibrateDVB value of the sound.
64~95	Add +2 to the VibrateDVB value of the sound.
96~127	Add +3 to the VibrateDVB value of the sound.

If adding to the DVB value would cause DVB to exceed +3, the result will be +3.

VibratoDVB value is a value that indicates the depth of Vibrato of a voice parameter.

Although Vibrato can be used also in music or Note, since there are a voice with effective Vibrato and a voice which is not so. For the reasons, it is necessary to pay attention.

### 3.7 Channel Pan (0xBn 0x0A vv)

n : MIDI channel 0 ~ 15 (0x0 ~ 0xF)

vv : Pan's position 0 ~ 127(0x0 ~ 0x7F)

The Control change 10 is used.

This is a pan changed per channel.

It can be used during music. In addition, it also can be used in a NoteOn.

The center is 0x40 (64).

vv	Pan Lch (dB)	Pan Rch (dB)	vv	Pan Lch (dB)	Pan Rch (dB)
0-1	0	- ∞	58-69	- 3.0	- 3.0
2-3	0	-37.5	70-71	- 4.5	- 3.0
4-5	0	-28.5	72-79	- 4.5	- 1.5
6-7	0	-24.0	80-87	- 6.0	-1.5
8-9	0	-21.0	88-93	- 7.5	- 1.5
10-11	0	-19.5	94-95	-7.5	0
12-13	0	-18.0	96-99	- 9.0	0
14-15	0	-16.5	100-103	-10.5	0
16-17	0	-15.0	104-107	-12.0	0
18-19	0	-13.5	108-111	-13.5	0
20-23	0	-12.0	112-113	-15.0	0
24-27	0	-10.5	114-115	-16.5	0
28-31	0	-9.0	116-117	-18.0	0
32-33	0	-7.5	118-119	-19.5	0
34-39	-1.5	-7.5	120-121	-21.0	0
40-47	-1.5	- 6.0	122-123	-24.0	0
48-55	-1.5	- 4.5	124-125	-28.5	0
56-57	-3.0	- 4.5	126-127	- ∞	0

### 3.8 NoteOff (0x8n kk vv)

---

n	:	MIDI channel	0 ~ 15 (0x0 ~ 0xF)
kk	:	Note number for normal voice	21 ~ 108 (0x15 ~ 0x6C)
		Note number for drum voice	24 ~ 84 (0x18 ~ 0x54)
		Note number for ADPCM voice	0~12, 92~127 (0x0 ~ 0xC, 0x5C ~ 0x7F)
vv	:	Note-off velocity	Ignored.

### 3.9 NoteOn (0x9n kk vv)

---

n	:	MIDI channel	0 ~ 15 (0x0 ~ 0xF)
kk	:	Note number for normal voice	21 ~ 108 (0x15 ~ 0x6C)
		Note number for drum voice	24 ~ 84 (0x18 ~ 0x54)
		Note number for ADPCM voice	0~12, 92~127 (0x0 ~ 0xC, 0x5C ~ 0x7F)
vv	:	Note-on velocity	1~127 (0x1 ~ 0x7F) (NoteOff : 0)

The "Velocity 0" is interpreted as NoteOff.

#### **\*Note for Velocity designation**

If the Velocity value of NoteOn of the beginning of music is small, sound like a click may be attached to an attack section. For preventing this problem, it can be coped with by enlarging a velocity.

Moreover, if big Velocity is specified once making Velocity small, the voice of the attack part of the sound may be changed. Owing a time to a volume change, the phenomenon is occurred. Please avoid a rapid change of Velocity.

### 3.10 DataEntry (MSB) 0xBn 0x06 vv

---

n	:	MIDI channel	0 ~ 15 (0x0 ~ 0xF)
vv	:	Control value	0 ~ 24 (0x0 ~ 0x18)

The Control change 6 is used.

It only corresponds with PRN (0 : 0) bend sense.

It designates a maximum value (the absolute value) of bend change.

Default : 2

### 3.11 DataEntry(LSB) 0xBn 0x26 vv

---

n	:	MIDI channel	0 ~ 15 (0x0 ~ 0xF)
vv	:	Control value	0 ~ 127 (0x0 ~ 0x7F)

The control change 38 is used.

It only corresponds with PRN (0 : 0) bend sense.

The setup value of this message is ignored.

### 3.12 RPN (MSB) 0xBn 0x65 vv

---

### 3.13 RPN (LSB) 0xBn 0x64 ww

---

n : MIDI channel 0 ~ 15 (0x0 ~ 0xF)

Use control change 101, 100.

Only RPN (0:0) bend sensitivity is supported.

vv : Control value 0

ww : Control value 0

Designate this message by the set (MSB, LSB) before using DataEntry.

### 3.14 Pitch Bend (0xEn ll mm)

---

n : MIDI channel 0 ~ 15 (0x0 ~ 0xF)

ll : Bend value LSB

mm : Bend value MSB

The width of the Pitch Bend change is designated by DataEntry (MSB)

Please be aware that using this message significantly increases the size of the data. Especially if ChannelReserve is set two or larger, pitch bend data for the channels that don't require pitch bend will also be inserted; and thus the data size becomes far larger than expected.

### 3.15 Set Tempo (Meta Event) 0xFF 0x51 0x03 aa bb cc

---

aa bb cc: The length of a quarter note (μsec)

It corresponds also to a tempo change in music.

### 3.16 Master Volume 0xF0 0x07 0x7F 0x7F 0x04 0x01 aa bb 0xF7

---

aa : 0

bb : 0 ~ 127 (0x0 ~ 0x7F)

In order to adjust the sound volume of the entire song, the master volume of the Universal System Exclusive Message can be used. This controls both FM sound source and ADPCM sound source.

bb = 127 gives the maximum sound volume.

The default is 127.

### 3.17 Text (Meta Event) 0xFF 0x01 len text

---

len : byte number of a text (Variable length expression)

A music name, a composer, a songwriter, an arrangement person, a player, and a song person can be inputted by setting up XF information header (APPENDIX 9.1 reference) using this meta-event.

[Note] Only the setup of a song name can be reflected to the file output.

**However, usually, mobile terminal do not recognize the control symbols such as “(”, “[”, and “/” defined by the XF information header. If these symbols are included, they will be displayed as plain characters.**

### 3.18 Copyright (Meta Event) 0xFF 0x02 len text

---

len : byte number of a text (Variable length expression)

The copyright information can be inputted using this meta-event.

### 3.19 Cue Point (Meta Event) 0xFF 0x07 0x05 0x53 0x54 0x41 0x52 0x54 (START)

### 3.20 Cue Point (Meta Event) 0xFF 0x07 0x04 0x53 0x54 0x4F 0x50 (STOP)

---

A playback start position and an end position are described as CuePoint of a meta-event.

Bytes 4~8 of START (0x53 0x54 0x 41 0x52 0x54 ) signify "START" in ASCII.

Bytes 4~7 of STOP (0x53 0x54 0x 4F 0x50 ) signify "STOP" in ASCII.

Use START and STOP that consist only of capital letters.

START must be inserted at the same point as the first Note-on or before it, and STOP must be inserted at the same point as the last Note-off or after it.

## ***4. Restrictions matter***

### ***4.1 GateTime***

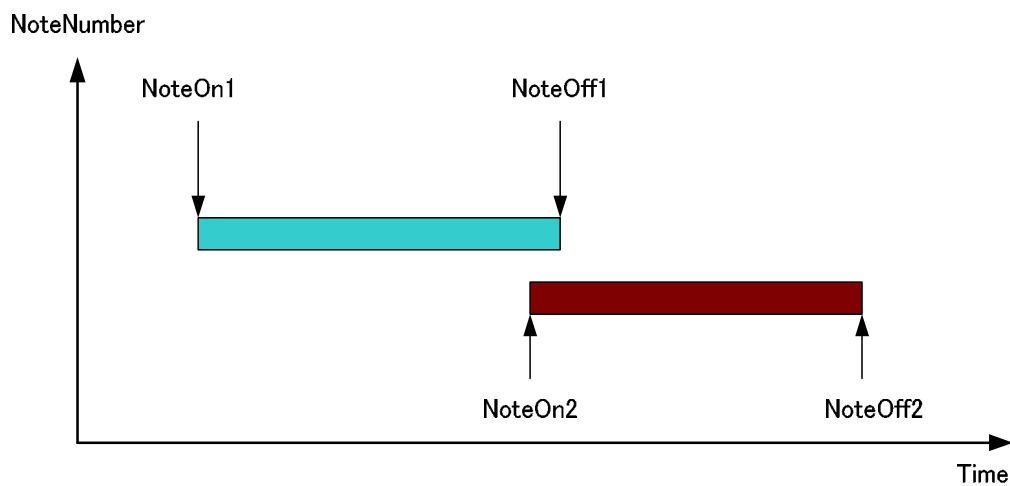
---

GateTime (time from NoteOn to NoteOff) is restricted to a maximum of 66.044 seconds.  
Please set up a note in the range.

## 5. Musical expression on the MA2

### 5.1 Slur

This is possible only in monophonic mode. Monophonic mode is selected by setting ChannelReserve to 1.  
 Designate a note-on for a different note before designating note-off for the previous note.  
 The overlap time is a length corresponding to at least 1 GateTime. Refer to appendix 8.2.  
 For a drum channel slur cannot be expressed because changing the notes means changing the voices on a drum channel.





## 6. Vibration & LED Linkage Channel

MA2 can interlock the Vibration and the LED with MA2 1 to 12 channels.

In order to know the MA2 channel which you want to interlock, it is necessary to get to know the structure of assignment of the sound generation channel of a converter.

### 6.1 Assignment of MA2 Sound generation Channel

---

The following is an order to assign sound emission channels:

1. Note which uses 4-operator voice can be assigned only to the channel of 1, 2, 3, 4, 9, 10, 11, and 12.
2. When Note which uses 4-operator voice is assigned to a channel, it will be impossible to use channels up to the channel number +4. Therefore, if 8 Notes of 4-operator voice are assigned, since all channels will become under use, it is impossible to assign channels more.
3. Note which uses 2-operator voice can also be assigned to every channel of 1 - 16.

Since it has been such a rule, 4-operator voice is assigned previously. In 4-operator voice, a drum voice is assigned preferentially, and a normal voice is assigned continuously. After assignment of 4-operator voice finishes, 2-operator voice is assigned. Also at this time, a drum voice is assigned preferentially.

i.e.; the turn of assignment is as follows.

1. 4-operator drum voice
2. 4-operator normal voice
3. 2-operator drum voice
4. 2-operator normal voice

#### 6.1.1 Assignment of Drum Channel

---

The number of types of Note which is used in Drum channel turns into a ChannelReserve number it-self. This number matches with the number of ChannelReserve in case ChannelReserve is correctly configured. A voice is specified from the Note number of the Note which is made Note-on. Then, when a voice is specified, the number of operators is shown from the voice data. Since priority of the voice assignment is given to 4-operator voice of the drum, 4-operator voice is searched and assigned first. Drum 2-operator voice is assigned after Normal 4-operator voice.

#### 6.1.2 Assignment of Normal Channel

---

A converter assigns MA2 channels in order with the lower number of MIDI channels. The number of channels to assign is decided with the ChannelReserve number in the head of a MIDI channel. In the channel secured by ChannelReserve, Note is assigned in order of the appearance of Note.

[Example] If the ChannelReserve is 4, and it assigned by 1, 2, 3, and 4, Note will appear as following order  
 $1 \rightarrow 2 \rightarrow 3 \rightarrow 4$ .

When the channel which will be assigned is under a sound generation, the channel will be through, and

then the next following change will be confirmed whether to be unassigned channel. In addition, if there are any unassigned channels, the channel will be assigned. Moreover, if the channel is under a sound generation, it will be skipped and the next following channel will be checked.

Thus, although Note is assigned in search of an unassigned channel, since it is necessary to increase the number of ChannelReserve when all channels are pronouncing, it becomes an error at the time of conversion. In this case, since the channel which will be assigned if the number of ChannelReserve is increased increases, this error is avoidable.

## *6.2 Determination of the Interlocked MA-2 Channel*

---

### **6.2.1 In the case of the MIDI Channel which want to Interlock is using Drum Voice**

It investigates in what position Note of the beginning of a musical instrument to assign is in the MIDI channel which uses a drum. This is for assigning in order of the appearance of Note. This number turns into MA2 number as it is. The MIDI channel for which this is using the drum voice is because it is given priority and assigned to the MIDI channel which is using the normal voice.

### **6.2.2 In the case of the MIDI Channel which want to Interlock is using Normal Voice**

Since the number of the channels of MA-2 which Vibration and LED can be interlocked with is one, respectively, when the MIDI channel which wants to interlock uses a normal voice, it is necessary to make ChannelReserve from 1. When ChannelReserve of the MIDI channel of a drum is 5 in order to assign by drum voice priority so that the above-mentioned quota rule may show, 1-5 are assigned preferentially. Next, since a normal channel is assigned from a number with a young MIDI channel, when the MIDI channel which wants to interlock is 1 of a MIDI channel, two interlocking MA will call it 6. If the ChannelReserve number of the following MIDI channels is added after that, it turns out whether the interlocking MIDI channel is assigned to which MA2.

## 7. ADPCM

### 7.1 Note-on, Note-off

---

Use the voice editor (MA2 Voice Library dialog) to designate the ADPCM data that will be assigned to drum bank note numbers 0~12 and 92~127.

For the designated note number, use Note-on and Note-off to play the ADPCM. It can be played with the same method as for the drum channel.

Note-on velocity 0 is interpreted as Note-off.

The gate time is limited as described earlier. When generating two or more tones, there is a limit for the time interval between a Note-off and the next Note-on. Designate TimeBase 2 or more.

### 7.2 Channel Volume (0xBn 0x07 vv)

---

Channel volume can be used. By using this, you can control the volume of the ADPCM channel. You can also change the volume during sounding.

When setting channel volume before Note-on message, set it at least 1 TimeBase before the message.

When setting channel volumes consecutively, place 1 TimeBase between the settings.

When MIDI channels that use ADPCM are the same as MIDI channels that use FM drum voices, the channel volume takes effect on both tones. Therefore, for MIDI channels that uses ADPCM, it is recommended to use other MIDI channels than FM drum channels.

The volume of ADPCM is also controlled by master volume. Use master volume as volume control of the whole music.

### 7.3 Sampling frequency

---

When using multiple ADPCM, you must unify the sampling frequency. All must be either 8 kHz or 4 kHz. If these are not consistent, a warning will be issued.

## 7.4 Limit of time between events

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This limit applies only to the case ADPCM is used. Take care about it only when using drum channel notes 0 to 12, and 92 to 127.

- The time interval between events is 1 TimeBase or longer.
- The first event is required to have interval 1 TimeBase or longer from the head position (1:1:0) of a music.
- Time interval of 2 TimeBase is required from Note-off to the next Note-on.
- Time interval of 2 TimeBase is also required from the last Note-off of a music to the first Note-on of the music. This is because the system interprets that the last moment of a music continues to the first moment of the music when performing repeat replay. Adjust the locations of START point and STOP point so that total of time intervals of “START to the first Note-on” and “last Note-off to STOP” becomes 2 TimeBase or more.
- Since the start point is also regarded as an event, channel volume or Note-on message cannot be placed at the time of START point.

(Example)

When events are the head position (1:1:0) of a music and channel volume: 1 TimeBase or more is required.

When events are the head position (1:1:0) of a music and Note-on: 1 TimeBase or more is required.

When events are channel volume and Note-on: 1 TimeBase or more is required.

When events are note and channel volume: 1 TimeBase or more is required.

When events are channel volume and channel volume: 2 TimeBase or more is required.

When events are Note-off and Note-on: 2 TimeBase or more is required.

When events are the last Note-off of a music and the first Note-on of the music: 2 TimeBase or more is required.

When events are start point and channel volume or Note-on: 1 TimeBase or more is required.

## ***8. Notes***

### ***8.1 Caution at a program change***

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If the release of a previously-silenced note still remains when a program change occurs, unintended sound may be heard. In this case, insert the program change after the release has decayed.

### ***8.2 Consecutive similar events***

---

Inserting messages such as channel volume, pan, modulation and program change consecutively into the same MIDI channel that is not generating tone not only takes no effect but also causes increase of data. Therefore, avoid inserting these events consecutively.

## 9. APPENDIX

### 9.1 XF information header (language specific)

Information or attributes of a song can be expressed as text meta-events within the SMF format.

0xFF 0x01 len <text>

Separate each item of information with a colon ":" and give the items successively.

Do not input anything for information items that are not listed.

Add new items after the last item. If there is no more text when the data is processed, subsequent data items will be considered blank even if no colons are found.

ASCII is used to express Items 1) and 2), and control characters.

<Information items>

- 1) XF Information Header – Language Specific -- ID    XF Information Header (Language specific) ID  
       XF Information Header – Four-character ID of "XFln" indicates Language Specific.

- 2) Language

This data specifies the character code set used in the XF information header. This does not designate the character code set used for the lyrics. The character code set of the lyrics is designated by the XF lyric header. It does not indicate the country where the song was produced.

The authoring tool supports only the following languages.

Symbol	Character code	Supported languages
L1	Latin 1(ASCII(7bit) + ISO 8859-1)	English, French, German, Italian, Spanish, Portuguese, etc.
JP	Shift-JIS	Japanese
KR	EUC-KR	Korean
HZ	HZ-GB-2312	Chinese (simplified)
B5	Big5	Chinese (traditional)
CY	KOI8-R	Russian, etc.
VN	TCVN-5773:1993	Vietnamese

- 3) Song Name

Language-specific display for the song name.

If you wish to display the song name in multiple lines, insert a single-byte slash "/" where you wish to change lines.

- 4) Composer

The composer of the original song. Use a single-byte space " " to separate the last name and first name. If listing more than one, use a single-byte slash "/" to divide entries.

- 5) Lyricist

If the original song has lyrics, this is the name of the lyricist.

The format is the same as for the composer.

#### 6) Arranger

The name of the person who arranged the original song or the music data.

The format is the same as for the composer.

#### 7) Performer (or singer)

The name of the person or group who performed or sang the original song.

The format is the same as for the composer.

#### 8) Programmer (music data producer)

The name of the person who produced the music data.

The format is the same as for the composer.

#### Note:

However, usually mobile terminal do not recognize the control symbols such as “(”, “[”, and “/” defined by the XF information header. If these symbols are included, they will be displayed as plain characters.

## 9.2 Number of ticks per 1 TimeBase

The Tick number per 1 TimeBase can be referred to. It depends for this figure on the value of Tempo.

Tempo	Tick
20	1
30	1
40	2
50	2
60	2
70	3
80	3
90	3
100	4
110	4
120	4
130	5
140	5
150	5
160	6
170	6
180	6
190	7
200	7

### 9.3 Normal voice list

BankSelectMSB: 122

BankSelectLSB: 0 --- 2-operator voice

BankSelectLSB: 1 --- 4-operator voice

PC#(Program Change number) 1 ~ 128

BankSelectMSB 122 BankSelectLSB 0,1		BankSelectMSB 122 BankSelectLSB 0,1		BankSelectMSB 122 BankSelectLSB 0,1	
PC#	Name	PC#	Name	PC#	Name
1	GrandPno	51	Syn.Str1	101	Bright
2	BritePno	52	Syn.Str2	102	Goblins
3	E.GrandP	53	ChoirAah	103	Echoes
4	HnkyTonk	54	VoiceOoh	104	Sci-Fi
5	E.Piano1	55	SynVoice	105	Sitar
6	E.Piano2	56	Orch.Hit	106	Banjo
7	Harpsi	57	Trumpet	107	Shamisen
8	Clavi	58	Trombone	108	Koto
9	Celesta	59	Tuba	109	Kalimba
10	Glocken	60	Mute.Trp	110	Bagpipe
11	MusicBox	61	Fr.Horn	111	Fiddle
12	Vibes	62	BrasSect	112	Shanai
13	Marimba	63	SynBras1	113	TnklBell
14	Xylophon	64	SynBras2	114	Agogo
15	TubulBel	65	SprnoSax	115	SteelDrm
16	Dulcimer	66	AltoSax	116	WoodBlok
17	DrawOrgn	67	TenorSax	117	TaikoDrm
18	PercOrgn	68	Bari.Sax	118	MelodTom
19	RockOrgn	69	Oboe	119	Syn.Drum
20	ChrchOrg	70	Eng.Horn	120	RevCymbl
21	ReedOrgn	71	Bassoon	121	FretNoiz
22	Acordion	72	Clarinet	122	BrthNoiz
23	Harmnica	73	Piccolo	123	Seashore
24	TangoAcid	74	Flute	124	Tweet
25	NylonGtr	75	Recorder	125	Telephone
26	SteelGtr	76	PanFlute	126	Helicptr
27	JazzGtr	77	Bottle	127	Applause
28	CleanGtr	78	Shakhchi	128	Gunshot
29	Mute.Gtr	79	Whistle		
30	Ovrdrive	80	Ocarina		
31	Dist.Gtr	81	SquareLd		
32	GtrHarmo	82	Saw.Lead		
33	Aco.Bass	83	CaliopLd		
34	FngrBass	84	ChiffLd		
35	PickBass	85	CharanLd		
36	Fretless	86	VoiceLd		
37	SlapBas1	87	FifthLd		
38	SlapBas2	88	Bass&Ld		
39	SynBass1	89	NewAgePd		
40	SynBass2	90	WarmPad		
41	Violin	91	PolySyPd		
42	Viola	92	ChoirPad		
43	Cello	93	BowedPad		
44	Contrabs	94	MetalPad		
45	Trem.Str	95	HaloPad		
46	Pizz.Str	96	SweepPad		
47	Harp	97	Rain		
48	Timpani	98	SoundTrk		
49	Strings1	99	Crystal		
50	Strings2	100	Atmosphr		



## 9.4 Drum voice list

BankSelectMSB: 123

BankSelectLSB: 0

ProgramChange: 1 --- 2-operator voice

ProgramChange: 2 --- 4-operator voice

NOTE# is Note number. (indicated as a numeric value which begins from 0.)

BankSelectMSB : 123		BankSelectMSB : 123	
BankSelectLSB : 0		BankSelectLSB : 0	
ProgramChange : 1,2		ProgramChange : 1,2	
NOTE#	Name	NOTE#	Name
24	SeqClick H	55	Splash Cymbal
25	Brush Tap	56	Cowbell
26	Brush Swirl L	57	Crash Cymbal 2
27	Brush Slap	58	Vibraslap
28	Brush Swirl H	59	Ride Cymbal 2
29	Snare Roll	60	Bongo H
30	Castanet	61	Bongo L
31	Snare L	62	Conga H Mute
32	Sticks	63	Conga H Open
33	Bass Drum L	64	Conga L
34	Open Rim Shot	65	Timbale H
35	Bass Drum M	66	Timbale L
36	Bass Drum H	67	Agogo H
37	Closed Rim Shot	68	Agogo L
38	Snare M	69	Cabasa
39	Hand Clap	70	Maracas
40	Snare H	71	Samba Whistle H
41	Floor Tom L	72	Samba Whistle L
42	Hi-Hat Closed	73	Guiro Short
43	Floor Tom H	74	Guiro Long
44	Hi-Hat Pedal	75	Claves
45	Low Tom	76	Wood Block H
46	Hi-Hat Open	77	Wood Block L
47	Mid Tom L	78	Cuica Mute
48	Mid Tom H	79	Cuica Open
49	Crash Cymbal 1	80	Triangle Mute
50	High Tom	81	Triangle Open
51	Ride Cymbal 1	82	Shaker
52	Chinese Cymbal	83	Jingle Bell
53	Ride Cymbal Cup	84	Belltrees
54	Tambourine		