MA-3 Hardware File Format Specification

Ver.0.91

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Yamaha Corporation

[Notes] This document is the specification of MA-3 Sound Middleware as sample source code. This explains the expected operation of Sound Middleware, but doesn't guarantee operation of sample middleware.
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Revision

Version	Date	Description
0.9	June 18, 2001	Initial edition
0.91	June.5, 2002	The clerical error at header was corrected.

1 Introduction

This document presents data format of MA-3 Hardware File Format. For MA-3 hardware sequence data, refer to Specification of MA-3 Hardware.

2 Specifications

This is the data format made by formatting the data that is handed to MA-3, consisting of data information, initialization data and sequence data.

2.1 Identification of format

When the code ”ma3a” is located on the head, the format is identified as MA-3 Hardware File Format. The size representation consisting of multiple bytes that is used on the format is to Big Endian.

2.2 Identification of chunks

Chunks are stored in the order or the header, stream tones, initialization data and sequence. However, each of them may be omitted.

2.2.1 Header chunk

Subchunks can be included arbitrarily, and their arrange is not restricted.

2.2.2 Stream tone chunk

Definition of stream audio data. Each tone has 32 bit tone number.

2.2.3 Initialization data chunk

Binary data that are sent to MA-3 real time write path are placed at they are. Data that are set in the hardware before reproduction.

2.2.4 Sequence chunk

Binary MA-3 hardware sequence is placed as it is.

2.3 Structure of format

```
<ID>
        UINT32      “ma3a”
        UINT32      Size            Overall size excluding ID section (bytes)
<Header chunk>
        UINT32      “info”
        UINT32      Size            Size of Header (bytes)
        <Reference speed>
            UINT32      “tmpo”
            UINT32      1
            UINT8       Unit            Designates unit time with [ms].
        <Stream audio>
            UINT32      “strm”
            UINT32      Size            Size of data (bytes)
            UINT32      Num             Number of Stream audio data
            <Individual stream audio data>
                UINT32      VoiceID         ID of audio data
                UINT32      Size            Size of audio data (bytes)
                VAL         Voices          Audio data
        <Initialization data>
            UINT32      “init”
            UINT32      Size            Size of initialization event string (bytes)
            VAL         Events          Initialization event string
        <Sequence>
            UINT32      “sequ”
            UINT32      Size            Size of hardware sequence event string (bytes)
            VAL         Events          Hardware sequence event string
        <End>
```