CHRP™ ISA Audio Device Binding

to:

IEEE 1275-1994

Standard for Boot

(Initialization, Configuration)

Firmware

Revision: 1.0 Unapproved DRAFT

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Table of Contents

1. Purpose of this Device Binding 3
2. Revision History 3
3. References. 3
4. Definition of Terms. 3
5. Device Characteristics (Informative) 3
6. Device-specific Configuration Variables 3
7. Device Nodes 4
7.1 Properties 4
7.1.1 Open Firmware-defined Properties for Device Nodes. 4
7.1.2 Device-specific Properties for Device Nodes 4
7.2 Methods. 5
7.2.1 Open Firmware-defined Methods for Device Nodes. 5
7.2.1.1 Device Arguments for “Open” Method 5
7.2.2 Device-specific Methods for Device Nodes 5
8. User Interface Commands. 5
8.1 Open Firmware-defined User Interface Commands 5
8.2 Device-specific User Interface Commands 5
9. Device State 5
9.1 Device State When Client is Started. 5
9.2 Device State Required When Client Calls Open Firmware 5
10. Other Commentary 5

1. Purpose of this Device Binding

This document specifies the application of Open Firmware to the PowerPC Common Hardware Reference Platform (CHRP™) ISA base audio controller, including device-specific requirements and practices for initialization, properties, and methods. This device shall be a child of an ISA or EISA Bus Node.

2. Revision History

Revision 1.0 Unapproved DRAFTMay 6, 1996	Initial revision. Jordan Brown, Sunsoft and John Kingman, IBM editors

3. References

This Open Firmware System binding standard *shall* be used in conjunction with the following publications. When the following standards are superseded by an approved revision, the revision *shall* apply.

[1] *IEEE Std 1275-1994 Standard for Boot (Initialization, Configuration) Firmware, Core Practices and Requirements*.

[2] *Core Errata, IEEE P1275.7/D4.*

[3] *ISA/EISA/ISA-PnP binding to: IEEE Std 1275-1994, Standard for Boot (Initialization, Configuration) Firmware*.

[4] *Device Support Extensions to: IEEE Std 1275-1994, Standard for Boot (Initialization, Configuration) Firmware*.

[5] *PowerPC Microprocessor Common Hardware Reference Platform: I/O Device Reference*. This document describes the PowerPC Common Hardware Reference Platform (CHRP™) System Standard I/O Devices; hardware registers, register locations, and hardware attributes.

[6] *Open Firmware Recommended Practice: Generic Names*.

[7] *Open Firmware Recommended Practice: Interrupt Mapping*.

[8] *PowerPC Microprocessor Common Hardware Reference Platform binding to: IEEE Std 1275-1994, Standard for Boot (Initialization, Configuration) Firmware*.

4. Definition of Terms

EISA: Extended Industry Standard Architecture

ISA: Industry Standard Architecture

5. Device Characteristics (Informative)

The CHRP audio device supplies basic, mature function for the recording, playback, and mixing of sound, as specified in [5].

6. Device-specific Configuration Variables

None.

7. Device Nodes

7.1. Properties

As specified in [1], [3] and [8], with the following additions or modifications.

7.1.1. Open Firmware-defined Properties for Device Nodes

"name" **S**

Standard *property name*, specifies the generic name of the device.

The meaning of this property is as defined in Open Firmware core document [1], as modified by the *Generic Names Recommended Practice*[6]. The value for nodes described by this specification shall be "sound."

"device_type" **S**

Standard *property name* to define the device's implemented interface.

The meaning of this property is as defined in the Open Firmware core document [1]. The value for nodes described by this specification shall be "sound."

"compatible" **S**

Standard *property name*, specifies device names with which this device is compatible.

The meaning of this property is as defined in Open Firmware, as modified by the *Generic Names Recommended Practice*[6]. As described in those documents, the entries are a list of device names with which this device is compatible, starting with the name of the device itself and progressing through successively less precise and possibly less functional compatible devices.

The value of this property shall include "pnpPNP,b007."

Additional entries may be supplied, at their appropriate position in the list, to describe devices with which this device is compatible.

"reg" **S**

Standard *property name* to define the package's registers.

The meaning of this property is as defined in the Open Firmware core document [1]. It describes the device's register set. The values which shall be assigned to this property are explained in the *ISA/EISA/ISA-PnP binding*[3]. The values provided shall provide compatibility with the Microsoft Windows Sound System.

"interrupts" **S**

Standard *property name* to define the package's interrupts.

The meaning of this property is as defined in the *Interrupt Mapping Recommended Practice* [7]. The values assigned to this property are explained in the *ISA/EISA/ISA-PnP binding*[3]. The value of this property shall reflect the interrupts used by the device.

"dma" **S**

Standard *property name* to define a package's DMA channels.

The values assigned to this property are explained in the *ISA/EISA/ISA-PnP binding*[3]. The value of this property shall be the numbers of the DMA channels assigned to this device. This device shall have two DMA channels assigned to it. The first component of the array shall be the DMA channel for recording; the second component shall be the DMA channel assigned for playback.

7.1.2. Device-specific Properties for Device Nodes

As specified in *Device Support Extensions*[4] for "sound" devices.

7.2. Methods

7.2.1. Open Firmware-defined Methods for Device Nodes

As specified in [1] and [3], with the following addition or modification. This device shall have its DMA and interrupt lines “tri-stated” when closed.

7.2.1.1. Device Arguments for “Open” Method

As specified in *Device Support Extensions*[4] for “`sound`” devices.

7.2.2. Device-specific Methods for Device Nodes

As specified in *Device Support Extensions*[4] for “`sound`” devices.

8. User Interface Commands

8.1. Open Firmware-defined User Interface Commands

None.

8.2. Device-specific User Interface Commands

None.

9. Device State

9.1. Device State When Client is Started

This device shall be closed when the client is started.

9.2. Device State Required When Client Calls Open Firmware

For devices not selected as Open Firmware's “console input device” or “console output device” device, there is no requirement. Typically, this device is unsuitable for use as an Open Firmware console input or console output device.

10. Other Commentary