

**Jz4740**

**32 Bits Microprocessor**

Application Notes 02

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**Ingenic Semiconductor Co. Ltd**

# Jz4740 32 Bits Microprocessor

## Application Notes 02

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### Release history

Date	Revision	Change
Nov. 2007	0.1	Before release

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# Jz4740 Embedded CODEC

## 1. DAC Headphone Volume Controlling

Following are the suggested DAC headphone output volume controlling. The volume level is higher the headphone volume is higher. The volume level zero means no audio. The sample factor means the audio sample should be multiplied by this factor. The real algorithm should be:

$$Sample_{NEW} = (Sample_{Original} \times FixP8\_Factor) \gg 8 \quad (32\text{-bit signed integer operation})$$

Volume Level	CDCCR1.HPMUTE	CDCCR2.HPVOL	Sample Factor	FixP8_Factor
31	0	11	1	256
30			0.966	247
29			0.931	238
28			0.897	230
27			0.862	221
26			0.828	212
25		10	1	256
24			0.959	245
23			0.917	235
22			0.876	224
21		01	0.835	214
20			1	256
19			0.948	243
18			0.897	230
17		00	0.845	216
16			1	256
15			0.938	240
14			0.875	224
13			0.813	208
12			0.750	192
11			0.688	176
10			0.625	160
9			0.563	144
8			0.500	128
7			0.438	112
6			0.375	96
5			0.313	80
4			0.250	64
3		0.188	48	
2		0.125	32	
1		0.063	16	
0		1	0.000	0