

## DESCRIPTION

The PT2392 is a CMOS IC that has a microphone peripheral circuit and an echo generation circuit for karaoke use, on a single chip.

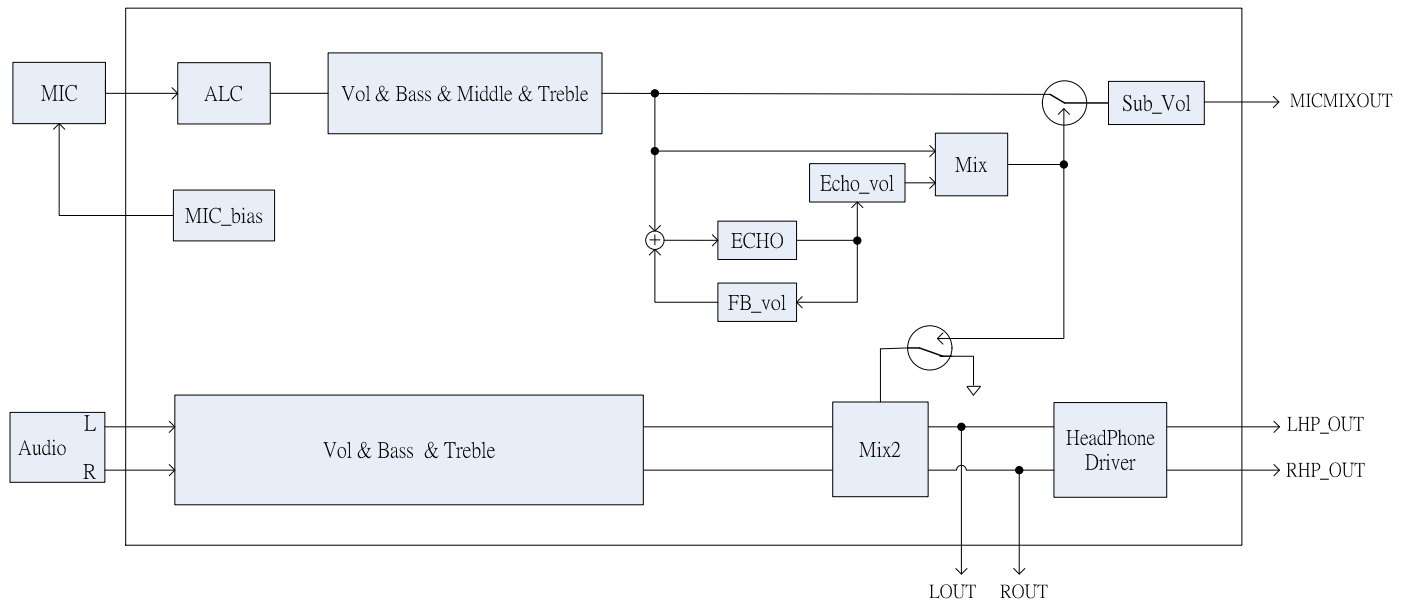
## APPLICATIONS

- Wireless Microphone
- Karaoke System
- Consumer Audio Applications
- Car Entertainment System

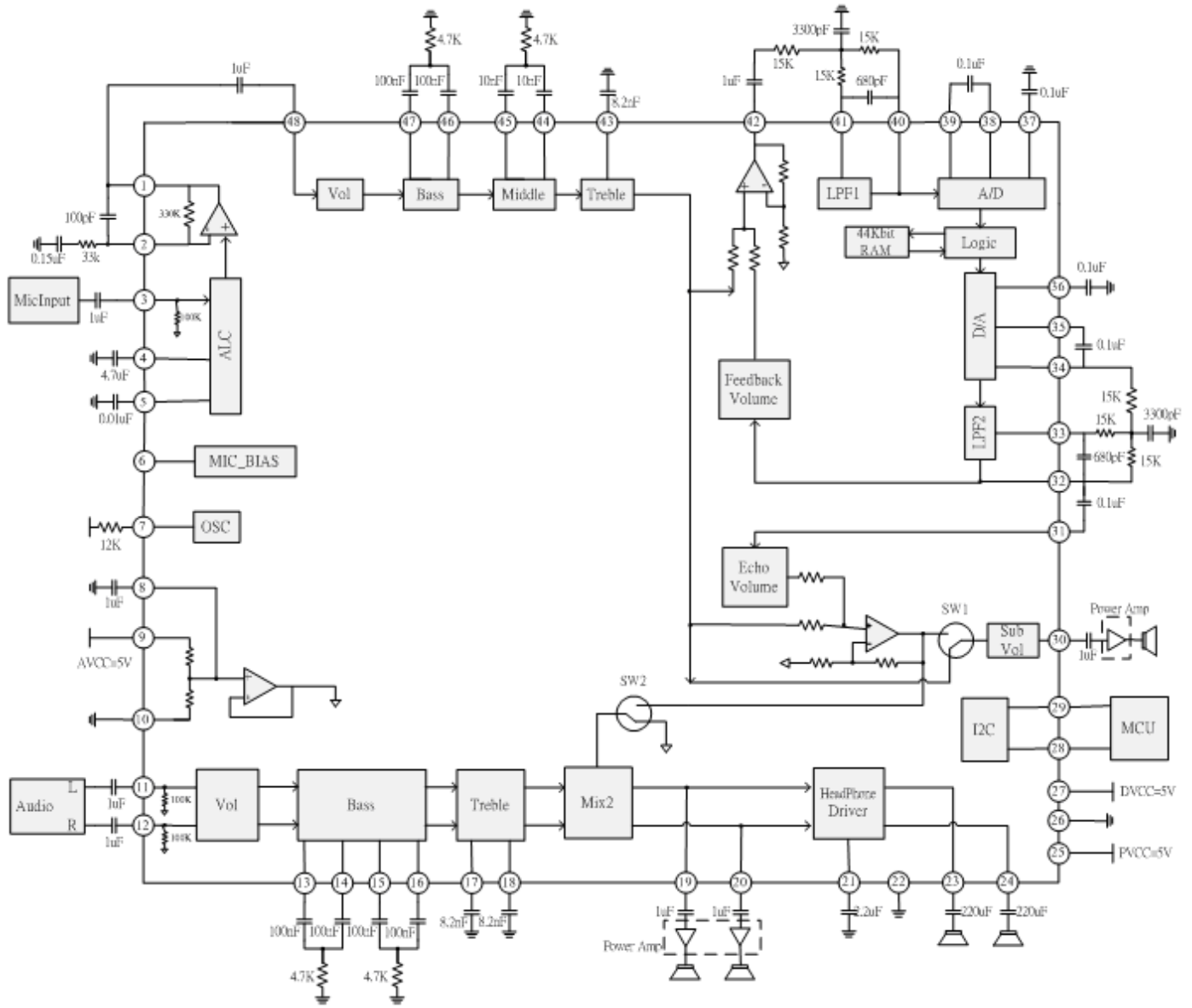
## FEATURES

- High-performance digital echo circuit using 44-Kbit RAM.
- wide delay time from 45 to 333ms in 22ms/step(typ.)
- A mic amplifier with an ALC makes it possible to handle overload input, and the ALC operating voltage are controlled by I<sup>2</sup>C Bus or externally set to the desired value.
- Built-in vol, bass,middle,treble,echo\_vol, fb\_volume,sub\_vol and controlled by I<sup>2</sup>C Bus .
- Built-in HP Driver and DEPOP.
- Built-in MIC\_bias.
- Internal micmixing amplifier.
- Master volume from +15dB to -79dB in 1dB/step.
- bass,middle,treble from +15dB to -15dB in 1dB/step.
- echo\_vol ,sub\_vol from 0dB to -28dB in 2dB/step.
- fb\_vol from -2dB to -8dB in 1dB/step.

## BLOCK DIAGRAM



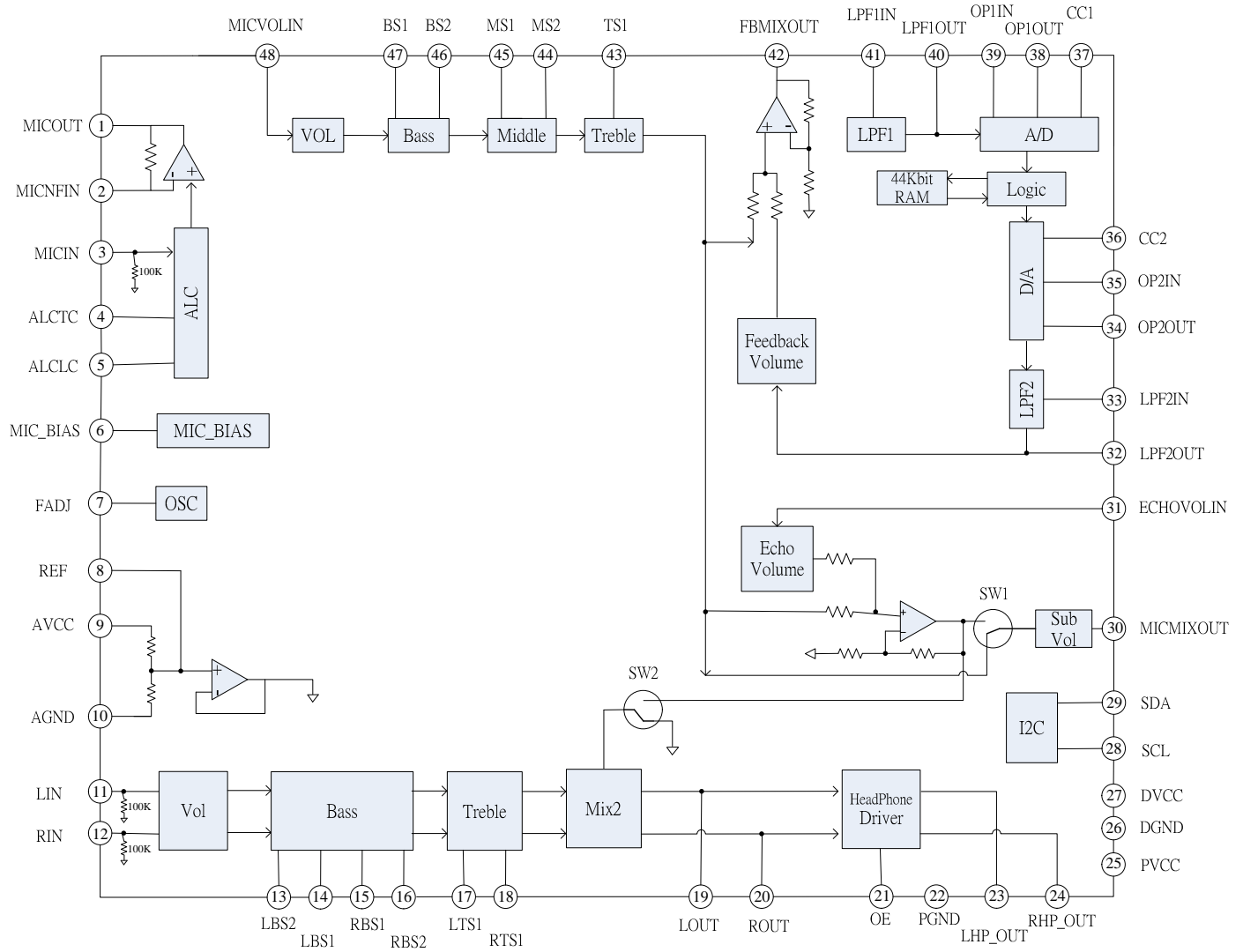
# APPLICATION EXAMPLE



## ORDER INFORMATION

Valid Part Number	Package Type	Top Code
PT2392-LQ	48 Pins, LQFP	PT2392-LQ

## PIN CONFIGURATION





## PIN DESCRIPTION

Pin Name	I/O	Description	Pin No.
MICOUT	O	Microphone signal output	1
MICNFIN	-	External resistor for MIC gain setting	2
MICIN	I	Microphone input	3
ALCTC	-	External Capacitor for ALC function time control	4
ALCLC	-	External adjust for ALC level control	5
MICBIAS	I	Supply Voltage to MIC	6
FADJ	-	External resistor (12KΩ) connecting to VCC for system clock.	7
VREF	-	Analog reference voltage (1/2VCC)	8
AVCC	-	Analog supply voltage input	9
AGND	-	Analog power ground	10
LIN	I	Left channel input	11
RIN	I	Right channel input	12
LBS2	O	Left channel bass cap1	13
LBS1	I	Left channel bass cap2	14
RBS1	I	Right channel bass cap1	15
RBS2	O	Right channel bass cap2	16
LTS1	I	Left channel treble cap	17
RTS1	I	Right channel treble cap	18
LOUT	O	Left channel output	19
ROUT	O	Right channel output	20
OE	I	Out Enable setting, connect a cap to gnd	21
PGND	-	Headphone driver power ground	22
LHPOUT	O	Left channel headphone driver output	23
RHPOUT	O	Right channel headphone driver output	24
PVCC	-	Headphone driver supply voltage input	25
DGND	-	Digital power ground	26
DVCC	-	Digital supply voltage input	27
SCL	I	I <sup>2</sup> C clock input	28
SDA	I	I <sup>2</sup> C data input	29
MICMIXOUT	O	Output signal of main channel & ECHO mixing	30
ECHOVOLIN	I	Echo Sound signal input for mixing	31
LPF2OUT	O	Lowpass filter 2 input	32
LPF2IN	I	Lowpass filter 2 output	33
OP2OUT	O	OP Amplifier 2 input/output. These pin can be used as Modulated/	34
OP2IN	I	Demodulated Integrator by connecting Capacitor	35
CC2	-	Current control 2	36
CC1	-	Current control 1	37
OP1OUT	O	OP amplifier 1 input/output. These pin can be used as modulated/	38
OP1IN	I	Demodulated integrator by connecting capacitor	39
LPF1OUT	O	Lowpass filter 1 input	40
LPF1IN	I	Lowpass filter 1 output	41
FBMIXOUT	O	Output signal of main channel & FB mixing	42
TS1	I	Main channel treble cap	43
MS2	O	Main channel middle cap2	44
MS1	I	Main channel middle cap1	45
BS2	O	Main channel bass cap2	46
BS1	I	Main channel bass cap1	47
MICVOLIN	I	Main channel volume input	48

## **IMPORTANT NOTICE**

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