



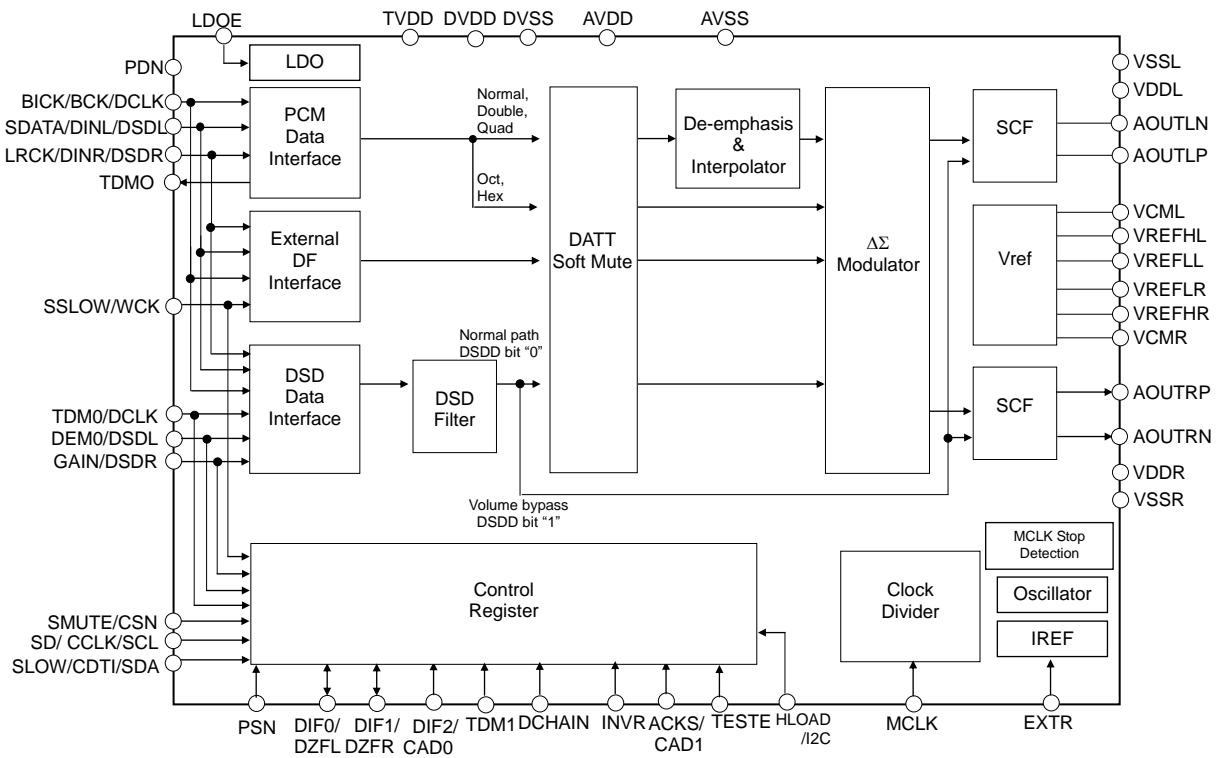
# AK4497 User's Guide

## Function List

1. General Description

The AK4497 is a new generation Premium 32-bit 2ch DAC that adopts VELVET SOUND™ technology. This application note lists the control modes used for the functions of the AK4497.

2. Block Diagram



Block Diagram

|                         |
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| <b>3. Function List</b> |
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■ Function List (Register Control Mode)

In Register Control mode, AK4497 can operate all three modes, PCM, EXDF and DSD mode.

Normal, Double and Quad PCM modes and Oct and Hex PCM modes are different in.

In DSD mode, there are Normal path operation and Direct path operation modes.

Function List (Register Control Mode)

Y: Available, -: Not available

| Function                                       | Register Control Mode |          |      |             |             |
|--|-----------------------|----------|------|-------------|-------------|
|  | PCM                   |          | EXDF | DSD         |             |
|  | Normal, Double, Quad  | Oct, Hex |      | Normal path | Direct path |
| System Clock Setting Select @PCMmode           | Y                     | Y        | -    | -           | -           |
| System Clock Setting Select @DSDmode           | -                     | -        | -    | Y           | Y           |
| System Clock Setting Select @EXDFmode          | -                     | -        | Y    | -           | -           |
| FS AutoDetect                                  | Y                     | Y        | Y    | -           | -           |
| DSD mode Path select                           | -                     | -        | -    | Y           | Y           |
| Audio Data Interface Format Select @ PCM Mode  | Y                     | Y        | -    | -           | -           |
| Audio Data Interface Format Select @ EXDF Mode | -                     | -        | Y    | -           | -           |
| TDM Mode                                       | Y                     | -        | -    | -           | -           |
| Daisy Chain                                    | Y                     | -        | -    | -           | -           |
| Digital Filter Select @PCM Mode                | Y                     | -        | -    | -           | -           |
| Digital Filter Select @DSD Mode                | -                     | -        | -    | Y           | Y           |
| De-emphasis Filter Select                      | Y                     | -        | -    | -           | -           |
| Digital Attenuator                             | Y                     | Y        | Y    | Y           | -           |
| Gain Control                                   | Y                     | Y        | Y    | Y           | -           |
| Zero Detection                                 | Y                     | Y        | Y    | Y           | -           |
| Mono/Stereo Mode select                        | Y                     | Y        | Y    | Y           | Y           |
| Output signal select (Channel select)          | Y                     | Y        | Y    | Y           | Y           |
| Output signal polarity select (Invert)         | Y                     | Y        | Y    | Y           | Y           |
| Sound Color Select                             | Y                     | Y        | Y    | Y           | Y           |
| DSD FullScale Detect                           | -                     | -        | -    | Y           | Y           |
| Soft Mute                                      | Y                     | Y        | Y    | Y           | -           |
| Register Reset(RSTN)                           | Y                     | Y        | Y    | Y           | Y           |
| Synchronize Function                           | Y                     | Y        | Y    | -           | -           |
| Resistor Control                               | Y                     | Y        | Y    | Y           | Y           |
| Heavy Load Mode                                | Y                     | Y        | Y    | Y           | Y           |

■ Function List (Pin Control Mode)

In Pin Control mode, AK4497 can operate PCM mode.

Normal, Double and Quad PCM modes and Oct and Hex PCM modes are different in.

Function List (Pin Control Mode)

Y: Available, -: Not available

| Function                                       | Pin Control Mode     |          |      |             |             |
|--|----------------------|----------|------|-------------|-------------|
|  | PCM                  |          | EXDF | DSD         |             |
|  | Normal, Double, Quad | Oct, Hex |      | Normal path | Direct path |
| System Clock Setting Select @PCMmode           | Y                    | Y        | -    | -           | -           |
| System Clock Setting Select @DSDmode           | -                    | -        | -    | -           | -           |
| System Clock Setting Select @EXDFmode          | -                    | -        | -    | -           | -           |
| FS AutoDetect                                  | -                    | -        | -    | -           | -           |
| DSDmode Path select                            | -                    | -        | -    | -           | -           |
| Audio Data Interface Format Select @ PCM Mode  | Y                    | Y        | -    | -           | -           |
| Audio Data Interface Format Select @ EXDF Mode | -                    | -        | -    | -           | -           |
| TDM Mode                                       | Y                    | -        | -    | -           | -           |
| Daisy Chain                                    | Y                    | -        | -    | -           | -           |
| Digital Filter Select @PCM Mode                | Y                    | -        | -    | -           | -           |
| Digital Filter Select @DSD Mode                | -                    | -        | -    | -           | -           |
| De-emphasis Filter Select                      | Y                    | -        | -    | -           | -           |
| Digital Attenuator                             | -                    | -        | -    | -           | -           |
| Gain Control                                   | Y                    | Y        | -    | -           | -           |
| Zero Detection                                 | -                    | -        | -    | -           | -           |
| Mono/Stereo Mode select                        | Y                    | Y        | -    | -           | -           |
| Output signal select (Channel select)          | -                    | -        | -    | -           | -           |
| Output signal polarity select (Invert)         | Y                    | Y        | -    | -           | -           |
| Sound Color Select                             | -                    | -        | -    | -           | -           |
| DSD FullScale Detect                           | -                    | -        | -    | -           | -           |
| Soft Mute                                      | Y                    | Y        | -    | -           | -           |
| Register Reset(RSTN)                           | -                    | -        | -    | -           | -           |
| Synchronize Function                           | -                    | -        | -    | -           | -           |
| Resistor Control                               | -                    | -        | -    | -           | -           |
| Heavy Load Mode                                | Y                    | Y        | -    | -           | -           |

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