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| REVISION HISTORY | Linux Interface Specification Device Driver Audio  User’s Manual: Software |

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| Rev. | Date | Description | |
| Page | Summary |
| 0.1 | Nov.20, 2015 | - | New creation. |
| 0.2 | Apr.15, 2016 | All | Add R-Car M3 support. |
| 5 | Update related documents. |
| 0.3 | Aug. 5, 2016 | 4 | - 1.2.5 Routing  Add CTU/MIX routing. |
|  |  | 5 | - 1.2.9 Channel transfer unit  Change chapter name. |
|  |  | 6 | - 1.4 Restrictions  Update support functions Rate Continuous, SRC(DT configuration), MIX, CTU and TDM(output). |
|  |  | 7 | - 2. Terminology  Add some of terminology and arranged in alphabetical order. |
|  |  | 8 | - Table 3.1 Hardware Environment  Add R-CarM3-Sip System Evaluation Board |
|  |  | 9 | - Figure 3.1 Audio Driver configuration  Update positioning of CTU/MIX modules. |
|  |  | 12 | - 4.3 Setting route  Change route path figures for CTU/MIX modules. |
|  |  | 22 | - 4.3.3 Setting route for capture  Add description about “shared-pin”. |
|  |  | 27,28 | - 4.4.1 Asynchronous Mode, 4.4.2 Synchronous Mode  Add this chapter. |
|  |  | 32 | - 4.6 CTU function  Add details of CTU configurations. |
|  |  | 33 | - 4.7 Mix function  Add details of MIX configurations. |
|  |  | 35 | - 4.8 Amixer control interface  Change chapter name. Add Table 4.4 External Function(CTU) and Table 4.5 External Function(Volume). |
|  |  | 38 | - 4.8.2 Example of Control setting  Add notice for volume setting. Change DVC In/Out setting example from 15% to 12%. |
|  |  | 39 | - 4.9 Multi-channel Function  Add this chapter. |
|  |  | - | - old 4.8 Structure  Remove structures description. All structures change to local. |
|  |  | 42 | - 5.2 Integration Procedure  Add setting default. |
|  |  | 43 | - 5.3.3 Device tree bindings  Add this chapter. |

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| 0.4 | Dec. 16, 2016 | 6 | - 1.5 Notice  Add description about first playback. |
|  |  | 12 | - 4.3 Setting route  Update description about device tree file. |
|  |  | 27 | - 4.4 Sampling Rate Conversion  Update description and device tree file setting. |
|  |  | 32 | - 4.6.1 CTU module setting  Update device tree file setting. |
|  |  | 33 | - 4.7.1 MIX module setting  Update device tree file setting. |
|  |  | 36 | - 4.8.1 Control list  Add description about volume control name. |
|  |  | 38 | - 4.8.2 Example of Control setting  Fix ‘Ex.4)’ missing control name ‘DVC Out Rate’. |
|  |  | 41 | - 5.1 Directory Configuration  Update directory configurations. |
|  |  | 42 | - 5.2 Integration Procedure  Change “Renesas Sampling Rate Convert Sound Card” to “ASoC Simple SCU sound card suport”. |
|  |  | 43 | - 5.3.3 Device tree bindings  Add device tree file “r8a7795-es1-salvator-x.dts” |
| 0.5 | Mar. 15, 2017 | 5 | - 1.3.2 Related Documents  Update related documents. |
|  |  | 8 | - 3.1 Hardware Environment  Add R-CarH3-SiP/M3-SiP System Evaluation Board Salvator-XS. |
|  |  | 29 | - 4.4.2 Synchronous Mode  Add description about rate setting enables. |
| 0.6 | Apr. 14, 2017 | 3,4 | - 1.2.3 PCM, 1.2.4 Audio Codec  Change maximum sampling rate of device’s input and output to 192000 Hz. |
| 0.7 | Jun. 14, 2017 | 3 | - 1.2.3 PCM  Change re-sampling rate table, and maximum sampling rate of device’s input and output to 48000 Hz. |
|  |  | 4 | - 1.2.4 Audio Codec  Add description about max rate at R-CarH3-Sip/M3-Sip System Evaluation Board. |
|  |  | 5 | - 1.3.2 Related Documents  Update related documents (Refer Rev 0.54). |
| 1.00 | Aug. 8, 2017 | All | Update document format. |
|  |  | 5 | - 1.2.10 TDM format  Add chapter. |
|  |  | 6 | - 1.5 Notice  Add description about the PCM output dependency. |
|  |  | 6 | - Table 1-3 PCM function  Add ‘Notes’ about ALSA-lib conversion. |

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| 1.01 | Oct. 24, 2017 | All | Add R-Car M3N support. |
|  |  | 6 | - 1.5 Notice  Update description about DAC/ADC.  Add workaround (a) and (b). |
|  |  | 15 | - 4.3 Setting route  Update description about device tree file for R-Car M3N. |
|  |  | 41 | - 4.8.2 Example of Control setting  Add example of Ramp control. |
|  |  | 43 | - 5.3.3 Device tree bindings  Add device tree file “r8a77965-salvator-x.dts” and “r8a77965-salvator-xs.dts” for R-Car M3N. |
| 1.50 | Jan. 29, 2018 | 1 | - 1.2.1 Connected Device  Update description about connected by I2C. |
|  |  | 3 | - 1.2.3 PCM  Update description about depends on the audio codec. |
|  |  | 5 | - 1.2.11 Ramp  Add support Ramp function at MIX and DVC. |
|  |  | 6 | - 1.3.2 Related Documents  Update related documents (Refer Rev 0.80). |
|  |  | 31 | - Figure 4.19 Description example of sampling rate setting  Add settings about cells and reg. |
|  |  | 34 | - Figure 4.22 Setting of Rate Continuous  Update reference structure members. |
|  |  | 36 | - Figure 4.24 Description example of MIX setting  Update to four channel mix case.  Add settings about cells and reg. |
|  |  | 39 | - Table 4-4 External function (Standard)[2/2]  Add description about more than one SRC devices. |
|  |  | 39 | - Table 4-5 External function (CTU)  Add description about more than one CTU devices. |
|  |  | 39 | - Table 4-6 External function (MIX)  Add this table. |
|  |  | 40 | - 4.8.2 Ramp function  Add this chapter. |
| 1.51 | Mar. 28, 2018 | All | Add R-Car E3 support. |
|  |  | 5 | - 1.2.3 PCM  Update description and command example when using 16-bit data. |
|  |  | 18 | - 4.3 Setting route  Add Table 4.3 Device tree files |
|  |  | 48 | - 4.8.3 Example of Control setting  Update description about case of using 16-bit data. |
|  |  | 54 | - Table 5-1 Device tree binding properties  Add description about “status” sub node. |

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| 1.52 | Apr. 25, 2018 | 18 | - 4.3 Setting route  Add “r8a7795-salvator-xs-2x2g.dts” and “r8a7795-salvator-xs-4x2g.dts” Device tree files. |
|  |  | 47 | - 4.8.2 DVC function  Add this chapter. |
| 1.53 | Jun. 27, 2018 | 9-12 | - 1.5 Notice  Update workaround (B) along with base code update. |
| 1.54 | Sep. 26, 2018 | 8 | - 1.3.2 Related Documents  Update related documents (Refer Rev 1.00). |
| 1.55 | Oct. 29, 2018 | 9-11 | - 1.5 Notice  Update example code to kernel “v4.14.70” base. |
|  |  | 23,26,29 | - 4.3.2 Setting route for playback  (1) to (3) Change default compatible “simple-audio-card“ to “audio-graph-card”. |
|  |  | 32 | - 4.3.2 Setting route for playback  (4) Update example description for “simple-audio-scu-card”. |
|  |  | 35,38,41 | - 4.3.3 Setting route for capture  (1) to (3) Change default compatible “simple-audio-card“ to “audio-graph-card”. |
|  |  | 60 | - 5.1 Directory Configuration  Add files “audio-graph-card.c” and “audio-graph-scu-card.c”. |
|  |  | 61 | - 5.2 Integration Procedure  Add Support “ASoC Audio Graph sound card” and “ASoC Audio Graph SCU sound card”. |
| 2.00 | Dec. 25, 2018 | - | - Update AddressList |
|  |  | 8 | - 1.3.2 Related Documents  Update related documents. |
|  |  | 14 | - 3.1 Hardware Environment  Add M3N-SiP System Evaluation Board Salvator-XS.  Add R-CarE3 System Evaluation Board Ebisu-4D. |
|  |  | 58 | - 4.9.2 TDM-SSI Function  Add description of the number of support channels at TDM. |
| 2.01 | Apr. 17, 2019 | - | - Update AddressList |
|  |  | 8 | - 1.3.2 Related Documents  Update related documents (R-Car Series, 3rd Generation User’s Manual: Refer Rev 1.50). |
| 2.50 | Dec. 1, 2020 | All | - Fix missing description of M3N-SiP and typo. |
|  |  | 9-11 | - 1.5 Notice  Update example code to kernel “v5.4.72” base. |
|  |  | All | - Figure 4-14, 4-24, 4-25, 4-26, 4-31, 4-32, 4-33, 4-34, 4-35  Update device tree setting example according to kernel “v5.4.72” base. |
|  |  | 41-43 | - 4.4 Sampling Rate Conversion  Fix description of the difference between aaa and bbb usage examples. |
|  |  | 62-63 | - 5 Integration  Update Figure 5-1 and 5-2, and remove Figure 5-3 according to kernel “v5.4.72” base. |
| 2.51 | Aug. 16, 2021 | All | Add R-Car D3 support. |
|  |  | All | Add Kernel v5.10 |
| 3.00 | Dec. 10, 2021 | ‐ | Add Kernel v5.10.41 support |
| 3.1.0 | Dec. 25, 2023 | - | Add Kernel v5.19.194 support for H3, M3, M3N, E3 |