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| REVISION HISTORY | | | Linux Interface Specification Device Driver Video Capture  User’s Manual: Software |
| Rev. | Date | Description | |
| Page | Summary |
| 0.1 | Nov. 20, 2015 | ⎯ | New creation. |
| 0.2 | Mar. 18, 2016 | All | Fix a typo  Fix from V4L to V4L2  Fix from AVD7482 to ADV7482  Fix from V4L2\_MEMORY\_MAP to V4L2\_MEMORY\_MMAP |
| 1 | 1.3 Restrictions  Delete the description of “The channel except for the VIN0 and VIN4 are not supported. Please refer to 3.1” |
| 2 | 1.4 Notice  Add the chip revision prohibited to use about scaling.  Add description of available VIN channel number |
| 3 | 1.5 Terminology  Add terminology of CSI41, CSI21, UDS and VC.  Change from CSI-2 channel to CSI-2 LINK |
| 5 | Figure 2.1 Module Configuration (R-Car H3)  Change VIN module to select VIN channel |
| 7 | 3. Function  Add description of PAL signal support |
| 7 | Table 3.1 Video Capture connection (R-Car H3)  Add VIN support channel and Video Input Connector |
| 7 | Add Table 3.2 Connection of Video Capture and CSI2 (R-Car H3) |
| 9 | Figure 3.1 Flow of analog data (R-Car H3)  Add PAL signal support |
| 10 | Table 3.4 Input resolution  Add PAL signal support |
| 11 | Figure 3.3 Clipping and Scaling function (R-Car H3)  Change Output size from 4096x4096 to “depend on input resolution”. |
| 11 | Add Table 3.6 scaling size on the input resolution |
| 15 | Figure 3.6  Change from V4L2\_PIX\_FMT\_RGB555X to V4L2\_PIX\_FMT\_ARGB555 |
| 18 | Table 4.1 VIN device node (R-Car H3)  Change VIN channel about video decoder input |
| 26 | 5.3.1 Module Parameters  Add module option is controlled by modifying the DT |
| 0.3 | Apr. 15, 2016 | All | Add R-Car M3 support. |
| 13 | Add notice of Full interlaced mode |
| 0.4 | Aug. 5, 2016 | 1 | Table 1.2 / Table 3.1  Add M3 System Evaluation Board information |
| 2 | 1.4 Notice  Add the horizontal clip size restriction at the time of YUV420 format output. |
| 7 | Add Table 4.2 Video Capture connection (R-Car M3) |
| 8 | Table 4.3 / Table4.4  According to the update of the H/W UM, and modify the table |
| 10 | Table 4.8  Change refresh rate from 720x576p @ 60Hz to 720x576p @ 50Hz. |
| 12 | Figure 4.5  Add note of caution to notice |
| 14 | 4.7 Initialization Process / 4.8 Capture Process  Add Use method of DMABUF and USERPTR memory type |
| 24 | Add 4.2 IPMMU setting |
| 0.5 | Dec. 16, 2016 | 1 | Table 1.1  Update reference URL for V4L2 API |
| 5 | 3.2 Module Configuration  Add Media Controller |
| 7 | Table 4.1 / Table4.2  Delete default comment |
| 8 | Table 4.3 / Table 4.4  Change default setting information of IFMD |
| 13 | Table 4.11 Field order (R-Car H3 / M3)  Add V4L2\_FIELD\_ALTERNATE field support |
| 18 | Table 5.1 VIN device node (R-Car H3 / M3)  Add connection in case of M3 |
| 25 | 5.2 IPMMU Setting  Add description of r8a7795-es1.dtsi |
| 29 | Add 5.3 Media Controller API |
| 32 | 6.1 Directory Configuration  Change file name for kernel version up |
| 33 | 6.2.1 Video Capture Driver  Change configuration name for kernel version up |
| 34 | 6.3.1 Module Parameters  Change dt description for kernel version up |
| 0.6 | Mar. 15, 2017 | 1 | Table 1.2 Related document (R-Car H3 / M3)  Update revision of H/W manual and add Salvator-XS manual |
| 10 | Add Table 4.4 Connection of Video Capture and CSI2 (R-Car H3 (ES2.0)) |
| 10 | Table 4.7 Output format (R-Car H3 / M3)  Add notice of NV12 format |
| 17 | Figure 4.6 Initialization sequence of V4L  Add processing to execute ioctl(VIDIOC\_QBUF) multiple times before ioctl(VIDIOC\_STREAMON) |
| 28 | 5.2 IPMMU Setting  Add arch/arm64/boot/dts/renesas/r8a7795.dtsi for R-Car H3(WS2.0) |
| 0.7 | Jun. 14, 2017 | - | Fix H/W revision notation from ES to Ver. |
| 1 | Table 1.2 Related document (R-Car H3 / M3)  Update revision of H/W manual |
| 37 | 6.3.1 Module Parameters  Add data lane number option for video decoder |
| 1.00 | Aug. 8, 2017 | All | Update document format. |
| 21 | Add 5.1.3 ioctl(VIDIOC\_G\_FMT) |
| 12,13,16,22 | Fix scaling width specification to a multiple of 16 instead of a multiple of 32. |
| 1.0.1 | Oct. 24, 2017 | All | Add R-Car M3N support. |
| 1 | Table 1.2 Related document (R-Car H3 / M3 / M3N)  Update revision of H/W manual |
| 1.50 | Jan. 29, 2018 | - | Update for kernel v4.14 |
| 15 | 4.6 Field order  Delete field order of V4L2\_FIELD\_ALTERNATE (unsupported from v4.14) |
| 15 | 4.6 Field order  Add V4L2\_FIELD\_SEQ\_TB/BT support |
| - | Delete IPMMU setting. |
| 1.51 | Mar. 28,2018 | All | Add R-Car E3 support. |
| 1.52 | Apr. 25, 2018 | 10 | Table 4.8 Input/output format (R-Car H3 / M3 / M3N / E3) Add Media Bus Pixel Code that VIN driver supports |
| 22 | 5.1.2 ioctl(VIDIOC\_REQBUFS)  Notice Add notice of single capture |
| 29 | 5.2.3 Configuring the pipeline and propagate format  Add notice for R-Car E3 when CVBS input. |
| 1.53 | Jun. 27, 2018 | 8,9 | Add CSI\_CHSEL[2:0] value about table of Connection of Video Capture and CSI2, Add “EMB is not supported in this driver” in E3 table |
| 28 | 5.2.2 Activate/Deactivate a link  Add example for R-Car E3  Fix from IFMD to CSI\_CHSEL[3:0] |
| 29 | 5.2.3 Configuring the pipeline and propagate format  Add notice in R-Car E3 |
| 33 | 6.3.1 Module Parameters  Add notice of virtual-channel setting  Add notice of lane setting in R-Car E3 |
| 1.54 | Oct. 22, 2018 | 1 | 1.2.2 Related Documents  Update Related Documents |
| 1.55 | Oct. 29, 2018 | 2 | 1.4 Notice  Add notice of using NV12 format |
| 10,12, 14,23 | Add note to be rounded to multiples of 32 at NV12/NV16 format |
| 20 | 5. External Interface  Fix minor number by kernel version up |
| 27 | 5.2.1 Show current routing  Update information for ltsi-2018 |
| 28 | 5.2.2 Activate/Deactivate a link  Update information for ltsi-2018 |
| 2.00 | Dec. 25, 2018 | - | Update AddressList |
| 1 | Table 1.2 Related documents  Update reference documents |
| 3 | Table 3.1 Hardware environment  Update board name |
| 20 | 5. External Interface  Add comment for subdevice |
| 34 | 6.3.1 Module Parameters  Change vin4/vin5 channel node for cvbs input  Fix node setting method for cvbs input in Ebisu board. |
| 2.01 | Apr. 17, 2019 | - | Update AddressList |
| 1 | Table 1.2 Related documents (R-Car H3 / M3 / M3N / E3)  Update reference manual |
| 17 | Figure 4.8  Add notice of timing that media-ctl is set |
| 34 | 6.3.1 Module Parameters  Add description of r8a77990-es10-ebisu.dts |
| 2.02 | Jun. 26, 2019 | 17 | 4.8 Capture Process  Figure 4.8 Initialization sequence of V4L2 (In case of /dev/videoX)  Add note of configuring routing by media-ctl |
| 2.50 | Apr. 24, 2020 | - | Update for kernel v5.4 |
| - | Add R-Car V3U support |
| 2.51 | Jun. 24, 2020 | 36 | Fix device node information for updating for kernel v5.4 |
| 2.52 |  | 33 | Add routing example command for cvbs in H3/M3/M3N/E3 |
| 2.53 | Dec. 1, 2020 | 1 | Fix Edition and Data of H/W manual for V3U/Falcon |
| 2 | 1.4 Notice  Add that BPS bit is not supported |
| 2 | 1.4 Notice  Add supported camera name. |
| 3 | Table 2.1 Terminology  Add terminology of BPS |
| 23 | Table 5.1  Add major/minor number of device file for V3U |
| 24 | Table 5.3  Fix Major number for V3U |
| 28 | Delete ioctl(VIDIOC\_CROPCAP) by kernel version up |
| 37 | Figure 6.1  Add source/header files for V3U |
| 38 | Video Capture Driver [R-Car H3 / M3 / M3N / E3 / V3U]  Add configuration for V3U |
| 2.54 | Jan. 29, 2020 | - | Add R-Car V3H v2.0 support. |
| 2.55 | Apr. 21, 2021 | - | Add R-Car D3 support |
| - | Add Kernel 5.10 support |
| 2.56 | Aug. 16, 2021 | 46 | Update setting for HDMI input in D3 |
| 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 |