Salvator-X schematics Revision History

File name: SALVATOR-X_REVxxx.DSN

Rev	Date of Issue	Page		Description	Parts information: Before the changes REF#	Before the changes Part Number	Revised or Addition REF#	Revised or Addition Part Number	Delete REF#	Delete Part Number	Notes
The board updated to revision 1.00. Type number changed to RTP0RC7795SIPB0011S.											
1.00	11/19	P05: R-CarH3_NEW_POW1	Connection changed	The power voltage supplied to VDDQVA_SD1 and VDDQVA_SD2 on the SiP changed from VLDO_SD1 and VLDO_SD2 to D1.8V because the power supplied to the eMMC is D1.8V.	-	-	-	-	-	-	
				The resistors added so that D1.8V and VLDO_SD1/VLDO_SD 2 can be switched in consideration of cases where SD1 and SD2 on the expansion	-	-	R790,R791	MCR01MZPJ000	-	-	
		P16: DU_ARGB	Components replaced	VREF handling and RSET constant changed according to ADV7123最新データシートRev.D	-	-	D44	AD1580ARTZ	-	-	
				VREF handling: AD1580, 1kΩ added,	-	-	R789	MCR01MZPF1001	-	-	
				Constant changed: 0.1uF -> 1uF	C372	GCM155R71A104KA55	C372	GCM155C71A105KE38	-	-	
				RSET constant changed from 560Ω to 536Ω (sinice the nominal resistance has no 530Ω, the frequency response was taken)	R238	MCR03EZPJ561	R238	MCR03MZPF5360	-	-	
		P19: P19: MIPI CSI-2_VIN	Mounting specification of components changed components changed	R632 changed to “not mounted”	-	-	-	-	-	-	
		P25: POWER	Components replaced	For R-CarM3: A trimmer resistor added so that DDR0_1.1V and DDR1_1.1V will be variable	-	-	VR3,VR4	ST-2TA203	-	-	
				R450 and R454 changed from 15kΩ ro 10kΩ	R450,R454	MCR01MZPF1502	R450,R454	MCR01MZPJ103	-	-	
				R451 and R455 changed from 39kΩ ro 15kΩ	R451,R455	MCR01MZPF3902	R451,R455	MCR01MZPF1502	-	-	
			Connection changed	For the 2nd-cut PMIC: Locations of the output capacitors for the VDD_DVFS and VDD power supplies changed. Locations of the current detection amplifier resistors (R417 and R432) for DVFS0.8V and VDD0.8V changed so that more output capacitors are allocated on the SoC.	-	-	-	-	-	-	
	12/1	P07: R-CarH3_LPDDR_POW	Error corrected	An error in the LQG15HH2N0S02 rated current corrected; 300mA -> 900mA	-	-	L68,L69,L70,L71,L72,L108,L109	-	-	-	
		P25: POWER	Connection changed	The input to VD25_IN (pin 24 of U72) changed from D3.3V to VSYS so that the power sequence of VLDO_2.5V can be changed as required.	-	-	-	-	-	-	
	12/1	P05: R-CarH3_NEW_POW1	Components replaced	Inductors changed to ferrite beads to improve analog power supply pattern	L3,L4,L5,L6,L8	MLF1608A1R0JTD25	L3,L4,L5,L6,L8	BLM15AX601SZ1D	-	-	
				A 1-uF capacitor added to each power supply of the EtherAVB (VDDQ25_ETH) and SDIH (VDDQVA_SDx)	-	-	C952,C953,C954,C955,C956	GCM155C71A105KE38	-	-	
	12/25	P07: R-CarH3_LPDDR_POW	Components added	Capacitors added to improve the DDR1.8V power suppy to support both of the R-Car H3 and M3	-	-	C957,C958	GRM21BR61E226ME44	-	-	
					-	-	C959,C960,C961,C962	GCM32ER70J476KE19	-	-	
	1/12	P06: R-CarH3_NEW_POW2	Components added	A capacitor added to improve the DVFS0.8V power supply	-	-	C963	GCM21BC71C106KE36	-	-	
	1/14				-	-	C964,C965,C966	GCM32ER70J476KE19	-	-	
		P25: POWER	Components replaced	Resistance of the current sense part and capacitance changed to improve the DVFS0.8V power supply	R425	MCR01MZPF6200	R425	MCR01MZPF4700	-	-	
				620Ω -> 470Ω, 1MΩ -> 10kΩ	R426	MCR01MZPF1004	R426	MCR01MZPF1002	-	-	
	1/13	P05: R-CarH3_NEW_POW1	Components replaced	Locations of the capacitors for the SDHI (VDDQVA_SDx) changed; 0.1uF(C126, C127, C128, C129) moved to the back of U1 and 1uF(C953, C954, C955, C956) moved to out of U1.	L3,L4,L5,L6,L8	MLF1608A1R0JTD25	L3,L4,L5,L6,L8	BLM15AX601SZ1D	-	-	
				A capacitor for EtherAVB (VDDQ25_ETH) deleted	-	-	-	-	C97	GCM155R71A104KA55	
				The capacitance of a capacitor for EtherAVB (VDDQ25_ETH) changed	C949	GCM155R71E103KA37	C949	GCM155R71A104KA55	-	-	
	1/14	P25: POWER	Components deleted	The resistors for initial verification deleted.	-	-	-	-	R781,R782,R783,R784	MCR03EZPJ000	
				The patterns for R422, R427, and R441 are left unchanged so that they can be modified.	-	-	-	-	R422,R427,R441	MCR01MZPJ000	
	1/15	P07: R-CarH3_LPDDR_POW	Components replaced	The capacitance of capacitors changed to improve the DDR1.1V power supply to support support both of the R-Car H3 and M3 (based on the simulation	C612-C615, C667-C670	GCM155R71A104KA55	C612-C615, C667-C670	GCM155C71A105KE38	-	-	
					C624-C631, C679-C686	GCM155R71A104KA55	C624-C631, C679-C686	GCM155R71E103KA37	-	-	
					C632-C637, C687-C692	GCM155R71A104KA55	C632-C637, C687-C692	GCM155R71H472KA37	-	-	
					C638-C666, C693-C733	GCM155R71A104KA55	C638-C666, C693-C733	GCM155R71H102KA37	-	-	
					C269,C273	GRM155R61A475MEAA	C269,C273	GCM155C71A105KE38	-	-	
	1/18	P12: USB2.0	Mounting specification of components changed components changed	USB2.0 ch0,ch1,ch2の実装形態を合わせるため、R185 and R186 changed to “mounted”.	-	-	-	-	-	-	
		P22: DEBUG_SCIF/LED/TactSW	Connection changed	ExPAD(pin29) added to the component library of CP2102 and connected to	-	-	U42,U44	-	-	-	
	1/20	P03: R-CarH3_DU/LBSC	Component replaced	Type number changed: 5P49V5923A -> 5P49V5923B	U61	5P49V5923A	U61	5P49V5923B	-	-	
	1/22	P03: R-CarH3_DU/LBSC	Component added	A resistor added so that Versaclock5(U61) OUT2 can be input to DU_DOTCLKIN2 of the H3SiP(U1). This is to make analog RGB output software-compatible between R-CarH3 and M3.	-	-	R792	MCR01MZPJ330	-	-	
1.01	2/4	P03: R-CarH3_DU/LBSC	Components replaced	The capacitance of capacitors C744 and C745 changed from 27pF to 24pF.	C744,C745	GCM1555C1H270JA16	C745,C745	GCM1555C1H240JA16	-	-	
		P11: Serial ATA	Components replaced	The capacitance of capacitors C324 and C325 changed from 16pF to 30pF.	C324,C325	GCM1555C1H160JA16	C324,C325	GCM1555C1H300JA16	-	-	
1.02	4/4	P02: R-CarH3_SD/QSPI	Pin name changed	TANS deleted from pin H39 of U1	-	-	-	-	-	-	
		P03: R-CarH3_DU/LBSC	Pin name changed	TANS deleted from pin G39 of U1	-	-	-	-	-	-	
				A20 to A25 deleted from the U1 symbol	-	-	-	-	-	-	
		P18: LVDS0	Comment(s) changed	A21 deleted from the comment	-	-	-	-	-	-	
		P20: EtherAVB(GbPHY, PHY_CN)	Comment(s) changed	A22 deleted from the comment	-	-	-	-	-	-	
1.03	4/27	P03: R-CarH3_DU/LBSC	Pin name changed	A26 deleted from the F4 pin of U1	-	-	-	-	-	-	
				MD24 deleted from the M1 pin of U1	-	-	-	-	-	-	
		P06: R-CarH3_NEW_POW2	Pin name changed	The AL6, AM6, and AK6 pins of U1 changed to VSS	-	-	-	-	-	-	
		P08: MODE_SW	Comment(s) changed	MD24 deleted from the comment	-	-	-	-	-	-	
		P25: POWER	Component replaced	R434 resistance changed from 620Ω to 1kΩ	R434	MCR01MZPF6200	R434	MCR01MZPF1001	-	-	
			Component replaced	C545 capacitance changed from 0.047uF to 0.022uF	C545	GCM155R71E473KA55	C545	GCM155R71E223KA55	-	-	
1.04	7/7	P25: POWER	Type no. of a component changed	The consumer-grade type number changed to the automobile-grade type	L54	SPM3020T-R15M-LR	L54	SPM3020T-R15M-CA02	-	-	
			Comment(s) changed	DVFS0.8V, VDD0.8V, DDR0_1.8V/DDR1_1.8V	-	-	-	-	-	-	
		P26: POWER2	Page added	The components not related to the BD9571MWV-M circuit configuration moved to the next page	-	-	-	-	-	-	
			Mounting specification of components changed components changed	The test sockets for current measurement changed to “initially not mounted”.	-	-	-	-	J1,J2	82_MMCX-50-0-18/111_OE	
					-	-	-	-	R719, R721	MCR01MZPJ121	
					-	-	-	-	C835, C836	GCM155R71H682KA55	
					-	-	-	-	R720, R722	MCR01MZPF51R0	

Rev	Date of Issue	Page		Description	Parts information						Notes
					Before the changes		Revised or Addition		Delete		
					REF#	Part Number	REF#	Part Number	REF#	Part Number	
The board updated to revision 2.00. Type number changed to RTP0RC7795SIPB0012S.											
2.00	9/5	P02: R-CarH3_SD/QSPI	Components replaced	62Ω added to all the signals of MMC0	-	-	R795-R804	MCR01MZPJ620	-	-	
			Component replaced	22Ω for the MMC0_CLK signal changed to 62Ω	R9	MCR01MZPJ220	R9	MCR01MZPJ620	-	-	
			Comment(s) changed	MMC0 signals: 50-Ω impedance	-	-	-	-	-	-	
		P03: R-CarH3_DU/LBSC	Component replaced	The crystal resonator X3 changed to 16.6600 MHz	X3	NX2016SA-16.6666MHz-CHP-CZS-39	X3	NX2016SA-16.66MHz-CHP-CZS-41	-	-	
			Component replaced	The crystal oscillator X4 changed to 16.6600 MHz	X4	NZ2520SB-16.6666MHz-RNAxxxx	X4	NZ2016SH-16.66MHz-NSC5021A	-	-	
		P04: R-CarH3_USB/HDMI	Connection changed	CSI2-CH3 deleted, so U1 connection signals and comment deleted CSI3_DATAP0(AK4), CSI3_DATAN0(AK3), CSI3_CLKP(AL4),	-	-	-	-	-	-	
			Component replaced	The components connected to U1 deleted due to deletion of CSI2-CH3, R65(U1.AR6)	-	-	-	-	R65	MCR01MZPF4021	
			Connection changed	SATA deleted, so U1 connection signals and comment deleted SATA_CLK_P(AW20), SATA_CLK_M(AW21), SATA_RX_P(AW23), SATA_RX_M(AW22), SATA_TX_P(AW24), SATA_TX_M(AW25)	-	-	-	-	-	-	
			Components replaced	The components connected to U1 deleted due to deletion of SATA	-	-	-	-	R58	MCR01MZPF2000	
				R58(U1.AN27), C33(U1.AW24), C35(U1.AW25)	-	-	-	-	C33, C35	GCM155R71E103KA37	
			Connection changed	USB3.0-CH1 deleted, so U1 connection signals deleted and comment changed USB3S1_CLK_P(AT36), USB3S1_CLK_M(AU36), USB3S1_RX_P(AV39), USB3S1_RX_M(AU39), USB3S1_TX_P(AW36), USB3S1_TX_M(AW37)	-	-	-	-	-	-	
			Components replaced	The following components connected to U1 deleted due to deletion of USB3.0-CH1	-	-	-	-	C30, C31	GCM155R71A104KA55	
			Connection changed	U1 connection signals changed due to deletion of USB3.0-CH1 USB23_DP(AU34), USB23_DM(AT34), USB23_ID(AP34), USB23_VBUS(AP33)	-	-	-	-	-	-	
			Component replaced	SW31 added to branch the GP6_30 and GP6_31 signals to CSI-VIN and USB2.0-CH3	-	-	SW31	CHS-08A	-	-	
		P05: R-CarH3_NEW_POW1	Connection changed	The following deleted functions are disconnected from the power supply pins The components left changed because they are to be used for other pins. CSI2-CH3: VDDQ18_CSI3, VDDQ09_CSI3 USB3.0-CH1: VDD09_USB31	-	-	-	-	-	-	
			Components replaced	SATA and USB3.0-CH1 connection to the power supply pins and components deleted	-	-	-	-	C38, C94, C800	GCM155R71A104KA55	
					-	-	-	-	C52	GCM155R71E103KA37	
					-	-	-	-	C50	GCM188C71A225KE02	
					-	-	-	-	L3	BLM15AX601SZ1D	
		P08: MODE_SW	Connection changed	MD28 connected to 8-pin SW12 and R117 deleted	-	-	-	-	R117	MCR03EZPJ103	
		P10: PCI-E ch0/ch1	Component replaced	CP18 deleted	-	-	-	-	CP18	-	
			Signal name changed	The signal names of SATA and PCIE1 changed because they are to be connected to the switching circuit. IO_EX7 -> PCIE1_SATA_SEL_18 PCIE1_RX_M -> PCIE1_CN_RX_M PCIE1_RX_P -> PCIE1_CN_RX_P PCIE1_TX_M -> PCIE1_CN_TX_M PCIE1_TX_P -> PCIE1_CN_TX_P	-	-	-	-	-	-	
		P11: Serial ATA	Connection changed	U11 connection signals deleted due to deletion of SATA and USB3-CH1 SATA_CLK_P(15pin), SATA_CLK_M(16pin), USB3S1_CLK_P(44pin), USB3S1_CLK_M(45pin)	-	-	-	-	-	-	
			Components replaced	The pull-up resistors for vOE0# and vOE7# of U11 added, and comment changed due to deletion of SATA and USB3-CH1, R793-R794(10k)	-	-	R793, R794	MCR01MZPJ103	-	-	
			Components replaced	SATA/PCIE1 switching circuit added, and the control signal changed based on Kriek	-	-	U97	MAX4888BETI+	-	-	
				The control signal connected to the I/O expander, 1.8V -> 3.3V switching circuit added	-	-	U98	HD74LV1GT08A	-	-	
					-	-	C972-C977	GCM155R71A104KA55	-	-	
		P13: USB3.0	Connection changed	The signal names of USB2.0 changed due to deletion of USB3.0-CH1 USB23_DP, USB23_DM, USB23_ID, USB23_VBUS	-	-	-	-	-	-	
			Component replaced	The USB3-CH1 related components deleted, changed, and comment changed due to deletion of USB3-CH1	-	-	-	-	L66	TCE1608G-900-4P	
				L66 deleted, CN12 changed to CN37 (USB2.0), L67 circuit diagram flipped vertically, no changes in connections	CN12	CMS1821-010010	CN37	ZX62D-AB-5P8	-	-	
			Components replaced	BD82065FVJ and other peripheral components added to support USB2.0-CH3 Note that 0-Ω resistors are not mounted because the OVC and PWEN signals are use in HDMI-IN.	-	-	U96	BD82065FVJ	-	-	
					-	-	C971	GCM155R71A104KA55	-	-	
					-	-	R805	MCR01MZPJ472	-	-	
					-	-	R806, R807	MCR01MZPJ000	-	-	
					-	-	R808	MCR01MZPJ202	-	-	
		P17: HDMI_OUT	Components replaced	An HDMI1.4 device is replaced with three HDMI2.0 devices, for each HDMI The utility pin connected to NC pin	U27, U28	TPD12S016PWR	U87, U88, U90, U91	TPD4E05U06DQAR	-	-	
							U89, U92	TPD5S116YFFR	-	-	
			Components replaced	The HDMI companion chip and peripheral components changed, 10kΩ x2 (R245, R250) deleted 4.7uF x4 (C377,C378,C380,C381) -> 0.1uF x4 (C967-C970)	-	-	-	-	R245, R250	MCR01MZPJ103	
					C377, C378, C380, C381	GCM21BC71E475KE36	C967-C970	GCM155R71A104KA55	-	-	
		P19: MIPI CSI-2_VIN	Components replaced	The following components are replaced with the ones in use to support HDMI2.0: D22, D23, D25 -> U93-U95	D22, D23, D25	RCLAMP0524PATCT	U93-U95	TPD4E05U06DQAR	-	-	
		P21: Audio(AK4613VQ)	Components replaced	A single two-stage audio connector is replaced with two one-stage connectors	CN24	HSJ1003-016020	CN39, CN40	SJ-3523-SMT	-	-	
		P23: EXIO_CN/MIPI_SW	Connection changed	The signals connected to CN29 deleted because CSI2-CH3 deleted CSI3_CLKN(33pin), CSI3_CLKP(35pin), CSI3_DATAN0(39pin), CSI3_DATAP0(41pin)	-	-	-	-	-	-	
			Signal name changed	Name of the two interrupt signals from CSI-VIN changed because they are to be branched via SW GP6_30/INTRQ1 -> GP6_30 (CN29.58pin) GP6_31/INTRQ2 -> GP6_31 (CN29.60pin)	-	-	-	-	-	-	
			Components replaced	CP68 to CP71 added to the unused pins of CN29	-	-	CP68-CP71	-	-	-	
		P24: POWER 5V/VSYS	Component replaced	Fan connectors for PMIC added. Comment corrected.	-	-	CN38	22-04-1031	-	-	
			Components replaced	R450 and R454 among 10kΩ resistors only had 5% indication; the value	R450,R454	MCR01MZPJ103	-	-	-	-	
		P02-P07	Component replaced	H3 symbol corrected in accord with WS2.0 (R-CarH3SiP_pin_list(rev1.52)(B).xls)	U1	H3SiP_BGA_r0096_005	U1	R-CarH3SiP_pin_list(rev1.52)(B)	-	-	

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					Before the changes		Revised or Addition		Delete		
					REF#	Part Number	REF#	Part Number	REF#	Part Number	
	9/6	P02: R-CarH3_SD/QSPI P20: EtherAVB(GbPHY, PHY_CN)	Comment(s) changed	Comment added to the EtherAVB signal: impedance 50Ω	-	-	-	-	-	-	
		P02: R-CarH3_SD/QSPI	Components replaced	The resistors (R724 to R729) for the TX signal of the EtherAVB changed to	R724-R729	MCR01MZPF1000	R724-R729	MCR01MZPF24R9	-	-	
		P04: R-CarH3_USB/HDMI	Component replaced	SW31 changed from CHS-08A to CHS-06A	SW31	CHS-08A	SW31	CHS-06A	-	-	
		P10: PCI-E ch0/ch1	Connection changed	The power supply for SN74AVC4T245 (U7 ,U8, and U9) changed from D1.8V to D1.8V_PERI	-	-	-	-	-	-	
		P20: EtherAVB(GbPHY, PHY_CN)	Connection changed	EN of U37 should be controlled by the PRESETn signal because D3.3V--1.2V sequence corrected	-	-	-	-	-	-	
		P24: POWER 5V/VSYS	Components deleted	Layout patterns for resistors (not mounted) deleted	-	-	-	-	R466-R469	MCR01MZPJ000	
			Connection changed	Two figures of a single point connection on the upper right changed to the Eagle specification	-	-	GND1,GND2	GND	-	-	
		P25: POWER PMIC	Components replaced	Capacitors near PMIC changed from 100uF to 47uF	C533-C537,C543,C942-C945	GRT32ER60J107ME13	C533-C537,C543,C942-C945	GCM32ER70J476KE19	-	-	
			Connection changed	Two figures of a single point connection on the upper right changed to the Eagle specification	-	-	GND3,GND4	GND	-	-	
		P26: POWER PMIC2	Components deleted	Layout patterns for resistors (not mounted) deleted	-	-	-	-	R470,R471,R716,R717	MCR03EZPJ000	
			Components deleted	Power supply measurement circuit deleted	-	-	-	-	J1,J2	82_MMCX-50-0-18/111_OE	
					-	-	-	-	TH6,TH7	0.6-1.1-1.2	
					-	-	-	-	R719,R721	MCR01MZPJ121	
					-	-	-	-	C835,C836	GCM155R71H682KA55	
					-	-	-	-	R720,R722	MCR01MZPF51R0	
		P24: POWER 5V/VSYS	Components moved	Capacitors for EMI and GND through holes moved from Page 24 to 26	C901-C912	GCM155R71H104KE02	-	-	-	-	
		P26: POWER PMIC2			TH3,TH4	0.6-1.1-1.2	-	-	-	-	
	9/7	P02: R-CarH3_SD/QSPI P14: SDHI0/SDHI3	Comment(s) changed	Comment added to the SDHI0 and SDHI3 signals: Impedance 50Ω	-	-	-	-	-	-	
		P25: POWER PMIC	Component replaced	10-k pull-down resistor (R809) added to the PWM2 signal	-	-	R809	MCR01MZPJ103	-	-	
	9/15	P03: R-CarH3_DU/LBSC	Connection changed	The power supply for VCCQSDC0 changed from D3.3V and D1.8V to D1.8V only. I2C is 5-V tolerant so D1.8V power supply creates no problems.	-	-	-	-	-	-	
			Comment(s) changed	"I2C is 3.3V signal." -> "I2C inputs are 5V tolerant."	-	-	-	-	-	-	
			Components replaced	D3.3V side input circuit components deleted following the change of the power suuply above.	-	-	-	-	L74	BLM15BB121SH1D	
				L74, C746	-	-	-	-	C746	GCM21BC71C106KE36	
		P10: PCI-E ch0/ch1	Connection changed	The power supply of SN74AVC4T245 (U7, U8, and U9) changed from D1.8V_PERI to D1.8V because PMIC changed from D3.3V to D1.8V and PERI is not required for the sequence.	-	-	-	-	-	-	
		P15: MMC0	Comment(s) changed	Comment under U22A (eMMC) changed	-	-	-	-	-	-	
		P19: MIPI CSI-2_VIN	Connection changed	The power supply source of ADV7482W changed from D1.8V_PERI to D1.8V because PMIC changed from D3.3V to D1.8V and PERI is not required for the sequence.	-	-	-	-	-	-	
			Components replaced	The generation circuit deleted because the circuit using D1.8V_PERI deleted	-	-	-	-	U80	MIC94091YC6	
				U80, C898, C899	-	-	-	-	C898	GCM155R71A104KA55	
					-	-	-	-	C899	GCM155C71A105KE38	
		P25: POWER PMIC	Symbol changed	Pin names and comments on BD9571MWV-M(U72) corrected Comment on PD for pins 70 and 71 deleted (because pull-down resistors will be deleted due to update of PMIC) Pin 51 name changed to POFFB/MRB Pin 65 name changed to BKUP_REQ Comment on pins 53 and 54 corrected	-	-	-	-	-	-	
		P26: POWER PMIC2	Components replaced	EMI capacitors (C924 to C926) deleted because D1.8V_PERI deleted	-	-	-	-	C924-C926	GCM155R71A104KA55	
		P25: POWER PMIC P26: POWER PMIC2	Components moved	Current measurement circuit for U58 and U59 moved from page 25 to 26. The new page number added in each page.	-	-	-	-	-	-	
	9/28	P25: POWER PMIC	Error corrected	An error in tolerance existing at the layout pattern for 0.01uF (not mounted). The type number and others have no errors. 16V->25V	-	-	-	-	-	-	
	10/5	P01 to P26	Comment(s) changed	The cover title and circuit diagram name on the lower right of each page changed. (For common use of the board with H3 and M3) Before correction: R-CarH3-SiP System Evaluation Board After correction: R-CarH3-SiP/M3-SiP System Evaluation Board	-	-	-	-	-	-	
		P2 to P7	Comment(s) changed	Comment on the difference of the symbol between H3 and M3 added to the symbolb U1. (For common use of the board with H3 and M3)	-	-	-	-	-	-	
		P04: R-CarH3_USB/HDMI	Comment(s) changed	Comment on the difference in resistance value between H3 and M3 added to CSIn_REXT. The list at the lower left of the page also changed. (For common use of the board with H3 and M3)	-	-	-	-	-	-	
	10/7	P25: POWER PMIC	Components replaced	C934 and C936 changed to the majority capacitors on the board GCM188R71C104KA37(0.1uF 1608 16V) -> GCM155R71A104KA55(0.1uF 1005 10V)	C934,C936	GCM188R71C104KA37	C934,C936	GCM155R71A104KA55	-	-	
			Components replaced	An error in the tolerance corrected (C559, C563, C568, and C572): 16V→25V	-	-	-	-	-	-	
		P06: R-CarH3_NEW_POW2	Component replaced	Capacitance of the capacitor for VDD power changed	C877	GCM188C71A225KE02	C877	CGA3E1X5R0J475KT	-	-	
			Components replaced	Capacitance of capacitors for DVFS power changed as follows.	-	-	-	-	-	-	
				0.22uF->0.01uF	C195,C198,C865,C866	GCM155R71C224KE02	C195,C198,C865,C866	GCM155R71E103KA37	-	-	
				0.022uF->0.01uF	C211,C213,C214	GCM155R71E223KA55	C211,C213,C214	GCM155R71E103KA37	-	-	
				0.047uF->0.01uF	C216	GCM155R71E473KA55	C216	GCM155R71E103KA37	-	-	
				0.047uF->0.015uF	C867,C868	GCM155C71A474KE36	C867,C868	GCM155R71E153KA55	-	-	
				0.047uF->0.022uF	C200,C870	GCM155R71E473KA55	C200,C870	GCM155R71E223KA55	-	-	
				0.01uF->0.022uF	C206,C210	GCM155R71E103KA37	C206,C210	GCM155R71E223KA55	-	-	
				0.047uF->0.033uF	C201	GCM155R71E473KA55	C201	GCM155R71E333KA55	-	-	
				0.22uF->0.033uF	C864	GCM155R71C224KE02	C864	GCM155R71E333KA55	-	-	
				0.01uF->0.047uF	C203,C209	GCM155R71E103KA37	C203,C209	GCM155R71E473KA55	-	-	
				0.01uF->0.068uF	C205	GCM155R71E103KA37	C205	GCM155R71C683KA55	-	-	
				0.01uF->0.1uF	C204	GCM155R71E103KA37	C204	GCM155R71A104KA55	-	-	
				0.47uF->0.1uF	C869	GCM155C71A474KE36	C869	GCM155R71A104KA55	-	-	
				0.047uF->0.22uF	C871	GCM155R71E473KA55	C871	GCM155R71C224KE02	-	-	
				0.022uF->0.47uF	C872,C873	GCM155R71E223KA55	C872,C873	GCM155C71A474KE36	-	-	
			Mounting specification of components changed components changed	C966 47uF mounted	-	-	-	-	-	-	
		P02: R-CarH3_SD/QSPI	Components replaced	eMMC dumping resistors changed: 62Ω -> 33Ω	R9,R795-R804	MCR01MZPJ620	R9,R795-R804	MCR01MZPJ330	-	-	
			Comment(s) changed	Line impedance changed from 50ohm to “within 75ohm’ Comment added: The distance between SiP and resistor(s) should be withn 20mm.	-	-	-	-	-	-	
		P01 to P26	Comment(s) changed	The cover title and circuit diagram name on the lower right of each page changed Before correction: Salvator-X	-	-	-	-	-	-	

Rev	Date of Issue	Page		Description	Parts information						Notes
					Before the changes		Revised or Addition		Delete		
					REF#	Part Number	REF#	Part Number	REF#	Part Number	
	10/27	P03: R-CarH3_DU/LBSC	Connection changed	An error in the pull-up power supply of the Versaclock5 SD/OE pin corrected. from D3.3V to D1.8V)	-	-	-	-	-	-	
			Components replaced	Type numbers of crystal oscillator/resonator changed (16.66MHz -> 16.64MHz)	X3	NX2016SA-16.66MHz-CHP-CZS-41	X3	NX2016SA-16.64MHz-CHP-CZS-41	-	-	
					X4	NZ2016SH-16.64MHz-RNA5013C	X4	NZ2016SH-16.64MHz-RNA5013C	-	-	
		P25: POWER	Components replaced	The type number of coils (L53 and L54) for DVFS and VDD changed. Ref numbers also changed. (L110, L111)	L53	DDFCUL0630-H-R12M	L110	SPM6545VT-R15M-D	-	-	
					L54	SPM3020T-R15M-CA02	L111	SPM5030VT-R15M-D	-	-	
			Comment(s) changed	Target: DVFS0.8V, VDD0.8V TYP changed from 0.8125V to 0.82V, 0.600V-1.100V deleted.	-	-	-	-	-	-	
				Target: D1.8V, D3.3V, VLDO2.5V Comment on PMIC voltage range deleted	-	-	-	-	-	-	
		P21: Audio(AK4613VQ)	Comment(s) changed	An error in dimension of connectors in the location figure corrected from 1.2mm to 12mm. A vertical line deleted.	-	-	-	-	-	-	
	11/1	P25: POWER	Components replaced	The type number of coils (L55 to L58) for DDR0_1.1V, DDR1_1.1V, D1.8V, and D3.3V changed. Ref numbers remain unchanged.	L55, L56	DFE201612PD-R24M	L55, L56	TFM201610ALMAR24MTAA	-	-	
					L57, L58	DFE201612PD-R33M	L57, L58	TFM201610ALMAR33MTAA	-	-	
	11/7	P11: Serial ATA	Connection changed	TX/RX connection of U97(PCIE signal SW) swapped in accord with the PCB	-	-	-	-	-	-	
	11/17	P03: R-CarH3_DU/LBSC	Component replaced	The type number of a crystal resonator (X3, not mounted) changed	X3	NX2016SA-16.64MHz-CHP-CZS-41	X3	NX2016SA-16.64MHz-CHP-CZS-53	-	-	
		All pages	Symbol modified	The attribute of the NC pins (symbol U1) changed from "Power" to "Passive" because all NC pins are not connected.	-	-	-	-	-	-	
		P03: R-CarH3_DU/LBSC	Component replaced	U61 changed from Versaclock5 to Versaclock6. Changed from two outputs to four outputs.	U61	5P49V5923B	U61	5P49V6901A	-	-	
			Connection changed	Two capacitors added to the power circuit.	-	-	C978,C979	GCM155R71A104KA55	-	-	
			Connection changed	The layout pattern for R792 (not mounted) deleted, connection not in use between U61.17pin and DU_DOTCLKIN2_18 deleted.	-	-	-	-	R792	MCR01MZPJ330	
			Comment(s) changed	Comment added to U1: "PRESET# : Internal pull-down. (100k typ.)'	-	-	-	-	-	-	
		All pages	Components replaced	Cpacitance of the capacitors for VDD and DVFS changed according to the result of the PI simulation. R-CarH3_ES2_Sipコア電源インピーダンス最終結果_161110.xlsx	-	-	-	-	-	-	
				4700pF -> 0.01uF* (not mounted)	C171,C172	GCM155R71H472KA37	C171,C172	GCM155R71H103KA55	-	-	
				0.01uF -> 0.1uF	C198	GCM155R71E103KA37	C198	GCM155R71H104KE02	-	-	
				0.047uF -> 0.01uF	C203,C209	GCM155R71E473KA55	C203,C209	GCM155R71H103KA55	-	-	
				0.068uF -> 0.047uF	C205	GCM155R71C683KA55	C205	GCM155R71H473KE02	-	-	
				0.022uF -> 0.068uF	C206	GCM155R71E223KA55	C206	GCM155R71H683KE02	-	-	
				0.022uF -> 0.01uF	C210	GCM155R71E223KA55	C210	GCM155R71H103KA55	-	-	
				0.01uF -> 0.015uF	C211,C215,C865	GCM155R71E103KA37	C211,C215,C865	GCM155R71H153KA55	-	-	
				0.01uF -> 0.022uF	C212,C214	GCM155R71E103KA37	C212,C214	GCM155R71H223KA55	-	-	
				0.01uF -> 0.22uF	C213	GCM155R71E103KA37	C213	GCM155R71C224KE02	-	-	
				0.01uF -> 0.047uF	C216	GCM155R71E103KA37	C216	GCM155R71H473KE02	-	-	
				0.015uF -> 0.01uF	C867	GCM155R71E153KA55	C867	GCM155R71H103KA55	-	-	
				0.1uF -> 0.01uF	C869	GCM155R71A104KA55	C869	GCM155R71H103KA55	-	-	
				0.22uF -> 0.01uF	C871	GCM155R71C224KE02	C871	GCM155R71H103KA55	-	-	
				0.01uF -> 0.01uF* (not mounted)	C880,C882,C885,C886	GCM155R71E103KA37	C880,C882,C885,C886	GCM155R71H103KA55	-	-	
			Components replaced	Capacitors for VDD and DVFS changed to the ones used in the PI simulation R-CarH3_ES2_Sipコア電源インピーダンス最終結果_161110.xlsx	-	-	-	-	-	-	
				0.01uF	C173,C174,C175,C177,C180,C195,C866,C883	GCM155R71E103KA37	C173,C174,C175,C177,C180,C195,C866,C883	GCM155R71H103KA55	-	-	
				0.015uF	C868	GCM155R71E153KA55	C868	GCM155R71H153KA55	-	-	
				0.022uF	C167,C200,C870,C888,C890,C891,C892	GCM155R71E223KA55	C167,C200,C870,C888,C890,C891,C892	GCM155R71H223KA55	-	-	
				0.033uF	C201,C864	GCM155R71E333KA55	C201,C864	GCM155R71C333KA37	-	-	
				0.047uF	C162,C884,C889,C893	GCM155R71E473KA55	C162,C884,C889,C893	GCM155R71H473KE02	-	-	
				0.1uF	C204,C929,C930	GCM155R71A104KA55	C204,C929,C930	GCM155R71H104KE02	-	-	
				2.2uF	C862,C863,C876	GCM188C71A225KE02	C862,C863,C876	GCM188R70J225KE22	-	-	
				47uF	C534,C535,C536,C537,C543,C546,C547,C548,C549,C550,C900,C942,C943,C944,C945,C964,C965,C966	GCM32ER70J476KE19	C534,C535,C536,C537,C543,C546,C547,C548,C549,C550,C900,C942,C943,C944,C945,C964,C965,C966	GCM32ER70J476ME19	-	-	
				47uF* (not mounted)	C946	GCM32ER70J476KE19	C946	GCM32ER70J476ME19	-	-	
			Components replaced	Capacitors not in the list changed to the ones used in the PI simulation R-CarH3_ES2_Sipコア電源インピーダンス最終結果_161110.xlsx	-	-	-	-	-	-	
				0.01uF* (not mounted)	C559,C563,C568,C572	GCM155R71E103KA37	C559,C563,C568,C572	GCM155R71H103KA55	-	-	
				0.022uF	C545	GCM155R71E223KA55	C545	GCM155R71H223KA55	-	-	
				0.047uF	C285,C286	GCM155R71E473KA55	C285,C286	GCM155R71H473KE02	-	-	
				0.1uF* (not mounted)	C558,C562,C932,C933	GCM155R71A104KA55	C558,C562,C932,C933	GCM155R71H104KE02	-	-	
				47uF	C533,C560,C564,C573,C837,C838,C839,C840,C841,C842,C843,C844,C928,C959,C960,C961,C962	GCM32ER70J476KE19	C533,C560,C564,C573,C837,C838,C839,C840,C841,C842,C843,C844,C928,C959,C960,C961,C962	GCM32ER70J476ME19	-	-	
	11/22	P06: R-CarH3_NEW_POW2	Comment(s) changed	The layout pattern for the capacitors framed with dotted lines, and "Do not stuff" added to it.	-	-	-	-	-	-	
			Components replaced	The capacitance of capacitors C171 and C172 (not mounted) changed from 0.01uF to 4700pF. Remain not mounted.	C171,C172	GCM155R71H103KA55	C171,C172	GCM155R71H472KA37	-	-	
	11/25	P06: R-CarH3_NEW_POW2	Mounting specification of components changed	The following six VDD power cacacitors mounted. C171, C172(4700pF)/C880, C882, C885, C886(0.01uF)	C171,C172	GCM155R71H472KA37	-	-	-	-	
					C880,C882,C885,C886	GCM155R71E103KA37	-	-	-	-	
	12/7	P25: POWER	Components replaced	The capacitance of the SDx power output capacitor changed from 1uF to 10uF. Note that the dimension is larger.	C579,C580,C581,C582	GCM155C71A105KE38	C579,C580,C581,C582	GCM21BC71C106KE36	-	-	
			Mounting specification of components changed	R768 not mounted, R770 mounted	-	-	-	-	-	-	
			Component added	A 0-Ω resistor (1005) added to V5AIN of PMIC	-	-	R810	MCR01MZPJ000	-	-	
			Components added	SBD added to the location between SW_DVFS and PGND_DVFS, and between SW_VD09 and PGND_VD09. (Not mounted)	-	-	D45,D46	RSX501L-20	-	-	
	12/13	P21: Audio(AK4613VQ)	Comment(s) changed	A figure indicating the connector locations changed. "Left AOUT" "Right MIC" => "Left MIC" "Right AOUT"	-	-	-	-	-	-	
		P15: MMC0 P19: MIPI CSI-2_VIN	Comment(s) changed	The size of R616 (1608) made visible.	-	-	-	-	-	-	
			Components replaced	47-k network resistors changed from size 1608 to 1005 for easier wiring of eMMC and unification of the size.	NR14, NR15	MNR14E0APJ473	R811-R818	MCR01MZPJ473	-	-	
					R223, R224, R236, R263	MCR03EZPJ473	R819-R821, R824		-	-	
					R262, R624 (非実装)	MCR03EZPJ473	R822, R823 (非実装)		-	-	
	12/1	P26: POWER PMIC2	Components added	Eight screw holes added to the circuit diagram	-	-	EH1-EH8	HOLE_E_4.0_6.0_8.0	-	-	
	1/19	P25: POWER	Components replaced	The capacitance of the following capacitors changed from 47uF to 100uF: C533, C534, C535, C536, C537, C543, C942, C943, C944, and C945	C533,C534,C535,C536,C537,C543,C942,C943,C944,C945	GCM32ER70J476ME19	C533,C534,C535,C536,C537,C543,C942,C943,C944,C945	GRT32ER60J107ME13	-	-	PMIC 4th回路→ 2nd回路に戻すための暫定対策
				R426 changed from 10k to 240	R426	MCR01MZPF1002	R426	MCR01MZPF2400	-	-	PMIC 4th回路→ 2nd回路に戻すための暫定対策
				R436 changed from 160 to 240	R436	MCR01MZPF1600	R436	MCR01MZPF2400			PMIC 4th回路→ 2nd回路に戻すための暫定対策
				The capacitance of the capacitor for SDx power output changed from 10uF to	C579,C580,C581,C582	GCM21BC71C106KE36	C579,C580,C581,C582	GCM219R71C105KA37	-	-	PMIC 4th回路→ 2nd回路に戻すための暫定対策
	2/14	P01: TITLE	Components added	Comment added: This Schematics is common by R-CarH3 and R-CarM3.	-	-	-	-	-	-	
		P06: R-CarH3_NEW_POW2	Mounting specification of components	C966 not mounted	C966	GCM32ER70J476ME19	-	-	-	-	

Rev	Date of Issue	Page		Description	Parts information						Notes
					Before the changes		Revised or Addition		Delete		
					REF#	Part Number	REF#	Part Number	REF#	Part Number	
2.01	4/24	P04: R-CarH3_USB/HDMI	Comment(s) changed	bits7,8 deleted from the comment of SW31	-	-	-	-	-	-	
		P23: EXIO_CN/MIPI_SW	Comment(s) changed	A26 deleted from the comment of CN28	-	-	-	-	-	-	
		P02: R-CarH3_SD/QSPI P21: Audio(AK4613VQ) P23: EXIO_CN/MIPI_SW	Signal name changed	SSI_WS01239 -> SSI_WS0129 SSI_SCK01239 -> SSI_SCK0129	- -	- -	- -	- -	- -	- -	
					-	-	-	-	-	-	
2.02	5/22	P25: POWER	Components replaced (PMIC 5th)	The capacitance of the following capacitors changed from 100uF to 47uF: C533, C534, C535, C536, C537, C543, C942, C943, C944, and C945	C533,C534,C535,C536,C537, C543,C942,C943,C944,C945	GRT32ER60J107ME13	C533,C534,C535,C536,C537, C543,C942,C943,C944,C945	GCM32ER70J476ME19	-	-	
				R426 changed from 240 to 10k and not mounted	R426	MCR01MZPF1002	-	-	-	-	
				R436 changed from 240 to 160 and not mounted	R436	MCR01MZPF1600	-	-	-	-	
				The capacitance of the SDx power output capacitor changed from 10uF to 1uF.	C579,C580,C581,C582	GCM219R71C105KA37	C579,C580,C581,C582	GCM21BC71C106KE36	-	-	
				R425 changed from 470 to 820	R425	MCR01MZPF4700	R425	MCR01MZPF8200	-	-	
				R434 changed from 1k to 510	R434	MCR01MZPF1001	R434	MCR01MZPF5100	-	-	
				R418 changed from 1k to 2.7k	R418	MCR01MZPF1001	R418	MCR01MZPF2701	-	-	
				The capacitance of the following capacitors changed from 0.022uF to	C545	GCM155R71H223KA55	C545	GCM155R71H104KE02	-	-	
		P11: Serial ATA	Comment(s) changed	Differential Impedance : 90(+/-5)ohm → 100ohm	-	-	-	-	-	-	
2.03	7/14	P25: POWER	Type no. of a component changed	U72 changed from BD9571MWV-M to BD9571MWF-M	U72	BD9571MWV-M	U72	BD9571MWF-M	-	-	
				D45 and D46 changed from RSX501L-20 to RSX501LAM20	D45,D46	RSX501L-20	D45,D46	RSX501LAM20	-	-	
2.04	10/17	P2 to P7	Comment(s) changed	Comment on the difference of the symbol M3N added to the symbolb U1. (For common use of the board with H3,M3 and M3N)	-	-	-	-	-	-	