

e² studio 7.3.0

Release Note

R20UT4471EE0100 Rev.1.00 Jan 14th, 2019

Introduction

This document outlines the device support, new features added in 7.3.0, fixed issues and open issues in e² studio 7.3.0.

Contents

1.	Product Information2
1.1	Supported Operating Systems2
1.2	2 Supported Toolchains 2
2.	Device Support
2.′	Project Generator Support
2.2	2 Code Generator & Smart Configurator Support9
3.	Smart Manual Support12
4.	What is new in 7.3.0?13
5.	What is new in 7.2.0?21
6.	What is new in 7.1.0?22
7.	What is new in 7.0.0?
8.	Useful workarounds and information for 7.3.045
9.	Open Issues in 7.3.055
10.	Appendix
10	.1 Website and Support



1. Product Information

1.1 Supported Operating Systems

These operating systems are officially supported by e² studio:

- Windows 7 32-bit
- Windows 7 64-bit
- Windows 8.1 32-bit
- Windows 8.1 64-bit
- Windows 10 32-bit
- Windows 10 64-bit

1.2 Supported Toolchains

The following toolchains are supported in e² studio 7.3.0.

		Renesas	GNU Arm Embedded (*2)	Renesas GCC/ GNURZ/ARM (*3)	IAR (*4)	Green Hills (*5)
	RL78	Yes (CC-RL)	No	Yes	Yes	No
Family	RX	Yes (CC-RX)	No	Yes	Yes	No
	RH850	No	No	No	Yes	Yes
Device	RZ/ARM	No	No (*1)	Yes	Yes	No
	Synergy/ARM	No	Yes	No	Yes	No

Note:

*1: Project converter is available to convert from GNUARM RZ/none to GNU ARM Embedded toolchain.

- *2: The GCC toolchains for RZ Family and Renesas Synergy[™] are distributed via Arm Developer at <u>https://developer.arm.com/open-source/gnu-toolchain/gnu-rm</u> or Launchpad.net at: <u>https://launchpad.net/gcc-arm-embedded</u>. They are also available using the "Additional components" page in the e² studio installer.
- *3: Legacy GNUARM toolchains are available from https://gcc-renesas.com/. In addition, the latest RX and RL78 Renesas GCC toolchains are available from this website.
- *4: The IAR toolchain plugins are available via the "Help"->" IAR Embedded Workbench plugin manager" menu in e² studio. These Eclipse plugins are provided by IAR and are not supported by Renesas.
- *5: The Green Hills toolchain plugins are available within the e² studio product. These plugins are provided by Green Hills and are not supported by Renesas.



2. Device Support

2.1 **Project Generator Support**

Note: The Renesas SH device family is no longer supported in e² studio.

Family	Group	Devices
EC-1	EC-1	R9A06G043
	C1H	R7F701260, R7F701270,(Debug Support Only)
-	C1M	R7F701263, R7F701271,(Debug Support Only)
-	D1L1	R7F701401, R7F701421,(Debug Support Only)
-	D1L2	R7F701422, R7F701402 (Debug Support Only)
-	D1M1	R7F701404, R7F701405,(Debug Support Only)
-	-	R7F701442, R7F701462,(Debug Support Only)
-	D1M2	R7F701408, R7F701410, R7F701428, R7F701430,(Debug Support Only)
-	E1L	R7F701201, R7F701205, (Debug Support Only)
-	E1M-S	R7F701202, R7F701204,(Debug Support Only)
-	E1M-S2	R7F701215, R7F701216, (Debug Support Only)
-		R7F701Z05, R7F701Z06, R7F701Z07, (Debug Support Only)
-		R7F701501, R7F701502, R7F701503, R7F701506, R7F701507, R7F701508,
	F1H	R7F701511, R7F701512, R7F701513, (Debug Support Only), R7F701521,
		R7F701522, R7F701524, R7F701525, (Debug Support Only)
-		R7F701542, R7F701543, R7F701546, R7F701547, R7F701557, R7F701560,
		R7F701561, R7F701562, R7F701563, R7F701566, R7F701567, R7F701577,
	F1K	R7F701580, R7F701581, R7F701582, R7F701583, R7F701586, R7F701587,
	1 10	R7F701597, R7F701602, R7F701603, R7F701610, R7F701611, R7F701612,
		R7F701613, R7F701620, R7F701621, R7F701622, R7F701623, (Debug
RH850 -		Support Only)
	F1KH	R7F701708, R7F701709, R7F701710, R7F701711, R7F701714,
-		R7F701715,(Debug Support Only)
		R7F701644, R7F701645, R7F701646, R7F701647, R7F701648, R7F701649,
	F1KM	R7F701650, R7F701651, R7F701684, R7F701685, R7F701686, R7F701687, R7F701688, R7F701689, R7F701690, R7F701691, R7F701692, R7F701693,
		R7F701694, R7F701695, (Debug Support Only)
-		R7F701002xAFP, R7F701003xAFP, R7F701006xAFP, R7F701007xAFP,
		R7F701008xAFP, R7F701009xAFP, R7F701010xAFP, R7F701011xAFP,
		R7F701012xAFP, R7F701013xAFP, R7F701014xAFP, R7F701015xAFP,
		R7F701016xAFP, R7F701017xAFP, R7F701018xAFP, R7F701019xAFP,
		R7F701020xAFP, R7F701021xAFP, R7F701022xAFP, R7F701023xAFP,
		R7F701024xAFP, R7F701025xAFP, R7F701026xAFP, R7F701027xAFP,
	F1L	R7F701028xAFP, R7F701029xAFP, R7F701030xAFP, R7F701032xAFP,
		R7F701033xAFP, R7F701034xAFP, R7F701040, R7F701041, R7F701042,
		R7F701043, R7F701044, R7F701045, R7F701046, R7F701047, R7F701048,
		R7F701049, R7F701050, R7F701051, R7F701052, R7F701053, R7F701054,
		R7F701055, R7F701056, R7F701057,(Debug Support Only)
-		R7F701544, R7F701545, R7F701548, R7F701549, R7F701552, R7F701553,
	F1M	R7F701564, R7F701565, R7F701568, R7F701569, R7F701572,
		R7F701573,(Debug Support Only)



	P1H-C	R7F701370AEEBG, R7F701371EABG, R7F701372EABG,
-		R7F701396EABG,(Debug Support Only)
-	P1L-C	R7F701388, R7F701389, R7F701390, R7F701391, (Debug Support Only)
	P1M	R7F701304, R7F701305, R7F701310, R7F701311, R7F701312, R7F701313, R7F701314, R7F701315, R7F701318, R7F701319, R7F701320, R7F701321, R7F701322, R7F701323,(Debug Support Only)
	P1M-C	R7F701373xABG, R7F701374xAFP, R7F701397xABG,(Debug Support Only)
	P1M-E	R7F701375, R7F701376, R7F701377, R7F701378, R7F701379, R7F701380, R7F701381, R7F701382, R7F701383, R7F701384, R7F701385, R7F701386,(Debug Support Only)
-	-	R7F701060xAFP, R7F701062xAFP, R7F701064xAFP, R7F701065xAFP, R7F701067xAFP, R7F701069xAFP, R7F701071xAFP,(Debug Support Only)
	D1A	R5F10CGB, R5F10CGC, R5F10CGD, R5F10CLD, R5F10CMD, R5F10CME, R5F10DGC, R5F10DGD, R5F10DGE, R5F10DLD, R5F10DLE, R5F10DMD, R5F10DME, R5F10DMF, R5F10DMG, R5F10DMJ, R5F10DPE, R5F10DPF, R5F10DPG, R5F10DPJ, R5F10DPK, R5F10DPL, R5F10DSJ, R5F10DSK, R5F10DSL, R5F10TPJ
	F12	R5F10968, R5F1096A, R5F1096B, R5F1096C, R5F1096D, R5F1096E, R5F109AA, R5F109AB, R5F109AC, R5F109AD, R5F109AE, R5F109BA, R5F109BB, R5F109BC, R5F109BD, R5F109BE, R5F109GA, R5F109GB, R5F109GC, R5F109GD, R5F109GE, R5F109LA, R5F109LB, R5F109LC, R5F109LD, R5F109LE
RL78	F13	R5F10A6A, R5F10A6C, R5F10A6D, R5F10A6E, R5F10AAA, R5F10AAC, R5F10AAD, R5F10AAE, R5F10ABA, R5F10ABC, R5F10ABD, R5F10ABE, R5F10AGA, R5F10AGC, R5F10AGD, R5F10AGE, R5F10AGF, R5F10AGG, R5F10ALC, R5F10ALD, R5F10ALE, R5F10ALF, R5F10ALG, R5F10AME, R5F10AMF, R5F10AMG, R5F10BAC, R5F10BAD, R5F10BAE, R5F10BAF, R5F10BAG, R5F10BBC, R5F10BBD, R5F10BBE, R5F10BBF, R5F10BBG, R5F10BGC, R5F10BGD, R5F10BGE, R5F10BGF, R5F10BGG, R5F10BLC, R5F10BLD, R5F10BLE, R5F10BLF, R5F10BLG, R5F10BME, R5F10BMF, R5F10BMG
	F14	R5F10PAD, R5F10PAE, R5F10PBD, R5F10PBE, R5F10PGD, R5F10PGE, R5F10PGF, R5F10PGG, R5F10PGH, R5F10PGJ, R5F10PLE, R5F10PLF, R5F10PLG, R5F10PLH, R5F10PLJ, R5F10PME, R5F10PMF, R5F10PMG, R5F10PMH, R5F10PMJ, R5F10PPE, R5F10PPF, R5F10PPG, R5F10PPH, R5F10PPJ
	F15	R5F113GK, R5F113GL, R5F113LK, R5F113LL, R5F113MK, R5F113ML, R5F113PG, R5F113PH, R5F113PJ, R5F113PK, R5F113PL, R5F113TG, R5F113TH, R5F113TJ, R5F113TK, R5F113TL
-	F1A	R5F114GC, R5F114GD, R5F114GE, R5F114GF, R5F114GG
-	F1E	R5F11KLE, R5F11LLG
-	G10	R5F10Y14, R5F10Y16, R5F10Y17, R5F10Y44, R5F10Y46, R5F10Y47
-	G11	R5F1051A, R5F1054A, R5F1056A, R5F1057A, R5F1058A
	G12	R5F10266, R5F10267, R5F10268, R5F10269, R5F1026A, R5F10277, R5F10278, R5F10279, R5F1027A, R5F102A7, R5F102A8, R5F102A9, R5F102AA, R5F10366, R5F10367, R5F10368, R5F10369, R5F1036A, R5F10377, R5F10378, R5F10379, R5F1037A, R5F103A7, R5F103A8, R5F103A9, R5F103AA

R5F1006A, R5F1006C, R5F1006D, R5F1006E, R5F1007A, R5F1007C, R5F1007D, R5F1007E, R5F1008A, R5F1008C, R5F1008D, R5F1008E, R5F100AA, R5F100AC, R5F100AD, R5F100AE, R5F100AF, R5F100AG, R5F100BA, R5F100BC, R5F100BD, R5F100BE, R5F100BF, R5F100BG, R5F100CA, R5F100CC, R5F100CD, R5F100CE, R5F100CF, R5F100CG, R5F100EA, R5F100EC, R5F100ED, R5F100EE, R5F100EF, R5F100EG, R5F100EH, R5F100FA, R5F100FC, R5F100FD, R5F100FE, R5F100FF, R5F100FG, R5F100FH, R5F100FJ, R5F100FK, R5F100FL, R5F100GA, R5F100GC, R5F100GD, R5F100GE, R5F100GF, R5F100GG, R5F100GH, R5F100GJ, R5F100GK, R5F100GL, R5F100JC, R5F100JD, R5F100JE, R5F100JF, R5F100JG, R5F100JH, R5F100JJ, R5F100JK, R5F100JL, R5F100LC, R5F100LD, R5F100LE, R5F100LF, R5F100LG, R5F100LH, R5F100LJ, R5F100LK, R5F100LL, R5F100MF, R5F100MG, R5F100MH, R5F100MJ, R5F100MK, R5F100ML, R5F100PF, R5F100PG, R5F100PH, R5F100PJ, R5F100PK, R5F100PL, R5F100SH, R5F100SJ, R5F100SK, R5F100SL, G13 R5F1016A, R5F1016C, R5F1016D, R5F1016E, R5F1017A, R5F1017C, R5F1017D, R5F1017E, R5F1018A, R5F1018C, R5F1018D, R5F1018E, R5F101AA, R5F101AC, R5F101AD, R5F101AE, R5F101AF, R5F101AG, R5F101BA, R5F101BC, R5F101BD, R5F101BE, R5F101BF, R5F101BG, R5F101CA, R5F101CC, R5F101CD, R5F101CE, R5F101CF, R5F101CG, R5F101EA, R5F101EC, R5F101ED, R5F101EE, R5F101EF, R5F101EG, R5F101EH, R5F101FA, R5F101FC, R5F101FD, R5F101FE, R5F101FF, R5F101FG, R5F101FH, R5F101FJ, R5F101FK, R5F101FL, R5F101GA, R5F101GC, R5F101GD, R5F101GE, R5F101GF, R5F101GG, R5F101GH, R5F101GJ, R5F101GK, R5F101GL, R5F101JC, R5F101JD, R5F101JE, R5F101JF, R5F101JG, R5F101JH, R5F101JJ, R5F101JK, R5F101JL, R5F101LC, R5F101LD, R5F101LE, R5F101LF, R5F101LG, R5F101LH, R5F101LJ, R5F101LK, R5F101LL, R5F101MF, R5F101MG, R5F101MH, R5F101MJ, R5F101MK, R5F101ML, R5F101PF, R5F101PG, R5F101PH, R5F101PJ, R5F101PK, R5F101PL, R5F101SH, R5F101SJ, R5F101SK, R5F101SL R5F104AA, R5F104AC, R5F104AD, R5F104AE, R5F104AF, R5F104AG, R5F104BA, R5F104BC, R5F104BD, R5F104BE, R5F104BF, R5F104BG, R5F104CA, R5F104CC, R5F104CD, R5F104CE, R5F104CF, R5F104CG, R5F104EA, R5F104EC, R5F104ED, R5F104EE, R5F104EF, R5F104EG, R5F104EH, R5F104FA, R5F104FC, R5F104FD, R5F104FE, R5F104FF, R5F104FG, R5F104FH, R5F104FJ, R5F104GA, R5F104GC, R5F104GD, G14 R5F104GE, R5F104GF, R5F104GG, R5F104GH, R5F104GJ, R5F104GK, R5F104GL, R5F104JC, R5F104JD, R5F104JE, R5F104JF, R5F104JG, R5F104JH, R5F104JJ, R5F104LC, R5F104LD, R5F104LE, R5F104LF, R5F104LG, R5F104LH, R5F104LJ, R5F104LK, R5F104LL, R5F104MF, R5F104MG, R5F104MH, R5F104MJ, R5F104MK, R5F104ML, R5F104PF, R5F104PG, R5F104PH, R5F104PJ, R5F104PK, R5F104PL R5F10E8A, R5F10E8C, R5F10E8D, R5F10E8E, R5F10EBA, R5F10EBC, R5F10EBD, R5F10EBE, R5F10EGA, R5F10EGC, R5F10EGD, R5F10EGE, G1A R5F10ELC, R5F10ELD, R5F10ELE R5F10JBC, R5F10JGC, R5F10KBC, R5F10KGC G1C R5F11AGG, R5F11AGH, R5F11AGJ G1D R5F10FLC, R5F10FLD, R5F10FLE, R5F10FMC, R5F10FMD, R5F10FME G1E R5F11B7C, R5F11B7E, R5F11BBC, R5F11BBE, R5F11BCC, R5F11BCE, G1F R5F11BGC, R5F11BGE, R5F11BLC, R5F11BLE

G1G	R5F11EA8, R5F11EAA, R5F11EB8, R5F11EBA, R5F11EF8, R5F11EFA
G1H	R5F11FLJ, R5F11FLK, R5F11FLL
	R5F11NGF, R5F11NGG, R5F11NLF, R5F11NLG, R5F11NME, R5F11NMF,
H1D	R5F11NMG, R5F11PLF, R5F11PLG, R5F11RMG
I1A	R5F1076C, R5F107AC, R5F107AE, R5F107DE
I1B	R5F10MME, R5F10MMG, R5F10MPE, R5F10MPG
	R5F10NLE, R5F10NLG, R5F10NME, R5F10NMG, R5F10NMJ, R5F10NPG,
I1C	R5F10NPJ
	R5F11768, R5F1176A, R5F11778, R5F1177A, R5F117A8, R5F117AA,
I1D	R5F117AC, R5F117BA, R5F117BC, R5F117GA, R5F117GC
I1E	R5F11CBC, R5F11CCC
	R5F10RB8, R5F10RBA, R5F10RBC, R5F10RF8, R5F10RFA, R5F10RFC,
L12	R5F10RG8, R5F10RGA, R5F10RGC, R5F10RJ8, R5F10RJA, R5F10RJC,
	R5F10RLA, R5F10RLC
142	R5F10WLA, R5F10WLC, R5F10WLD, R5F10WLE, R5F10WLF, R5F10WLG,
L13	R5F10WMA, R5F10WMC, R5F10WMD, R5F10WME, R5F10WMF, R5F10WMG
L1A	R5F11MMD, R5F11MME, R5F11MMF, R5F11MPE, R5F11MPF, R5F11MPG
	R5F110ME, R5F110MF, R5F110MG, R5F110MH, R5F110MJ, R5F110NE,
	R5F110NF, R5F110NG, R5F110NH, R5F110NJ, R5F110PE, R5F110PF,
L1C	R5F110PG, R5F110PH, R5F110PJ, R5F111ME, R5F111MF, R5F111MG,
LIC	R5F111MH, R5F111MJ, R5F111NE, R5F111NF, R5F111NG, R5F111NH,
	R5F111NJ, R5F111PE, R5F111PF, R5F111PG, R5F111PH, R5F111PJ
110	R5F51101, R5F51103, R5F51104, R5F51105, R5F5110H, R5F5110J
	R5F51111, R5F51113, R5F51114, R5F51115, R5F51116, R5F51117,
111	R5F51118, R5F5111J
113	R5F51135, R5F51136, R5F51137, R5F51138
130	R5F51303, R5F51305, R5F51305B, R5F51306, R5F51306B, R5F51307,
	R5F51308
210	R5F52103, R5F52104, R5F52105, R5F52106, R5F52107, R5F52108,
	R5F5210A, R5F5210B
21A	R5F521A6, R5F521A7, R5F521A8
220	R5F52201, R5F52203, R5F52205, R5F52206
230	R5F52305, R5F52306
231	R5F52315, R5F52316, R5F52317, R5F52318
23T	R5F523T3, R5F523T5
24T	R5F524T8, R5F524TA, R5F524TB, R5F524TC, R5F524TE
24U	R5F524UB, R5F524UC, R5F524UE
610	R5F56104, R5F56106, R5F56107, R5F56108
621	R5F56216, R5F56217, R5F56218
62G	R5F562G7, R5F562GA
62N	R5F562N7, R5F562N8
62T	R5F562T6, R5F562T7, R5F562TA
630	R5F56307, R5F56308, R5F5630A, R5F5630B, R5F5630D, R5F5630E

RX

RENESAS

		R5F56316, R5F56317, R5F56318, R5F5631A, R5F5631B, R5F5631D,
		R5F5631E, R5F5631F, R5F5631G, R5F5631J, R5F5631K, R5F5631M,
	631	R5F5631MF, R5F5631N, R5F5631P, R5F5631PF, R5F5631W, R5F5631Y,
		R5S56310
	634	R5F5634B, R5F5634B_5V, R5F5634D, R5F5634D_5V, R5F5634E, R5F5634E_5V
	63N	R5F563NA, R5F563NB, R5F563ND, R5F563NE, R5F563NF, R5F563NK, R5F563NW, R5F563NY
	63T	R5F563T4, R5F563T5, R5F563T6, R5F563TB, R5F563TB_5V, R5F563TC, R5F563TC_5V, R5F563TE, R5F563TE_5V
	64M	R5F564MF, R5F564MG, R5F564MJ, R5F564ML
		R5F56514, R5F56517, R5F56519, R5F5651C, R5F5651C DUAL, R5F5651E,
		R5F5651E_DUAL
	651	_
		R5F56519DMB, R5F5651EDMB, R5F5651EDMB_DUAL,(Debug Support Only)
		R5F565N4, R5F565N7, R5F565N9, R5F565NC, R5F565NC_DUAL, R5F565NE,
		R5F565NE_DUAL
	65N	
		R5F565N9DMB, R5F565NEDMB, R5F565NEDMB_DUAL,(Debug Support Only)
	66T	R5F566TA, R5F566TE
	71M	R5F571MF, R5F571MG, R5F571MJ, R5F571ML
		R7S721000, R7S721000_DualSPI, R7S721001, R7S721001_DualSPI,
		R7S721010, R7S721010_DualSPI, R7S721011, R7S721011_DualSPI,
	A1	R7S721020, R7S721020_DualSPI, R7S721021, R7S721021_DualSPI,
		R7S721030, R7S721030_DualSPI, R7S721031, R7S721031_DualSPI,
		R7S721034, R7S721034_DualSPI
		R7S921040, R7S921041, R7S921042, R7S921043, R7S921045, R7S921046,
	A2	R7S921047, R7S921048, R7S921051, R7S921052, R7S921053, R7S921056,
		R7S921057, R7S921058
	G1C	R8A77470
	G1E	R8A77450
	012	R8A77450_Core1,(Debug Support Only)
RZ	G1H	R8A77420
	G1M	R8A77430
		R8A77430_Core1,(Debug Support Only)
	G1N	R8A77440
		R7S910001, R7S910002, R7S910006, R7S910007, R7S910011, R7S910013,
		R7S910015, R7S910015_M3, R7S910016, R7S910016_M3, R7S910017,
		R7S910017_M3, R7S910018, R7S910018_M3, R7S910025, R7S910026,
	T1	R7S910027, R7S910028, R7S910035, R7S910036, R7S910101, R7S910102,
		R7S910106, R7S910107, R7S910111, R7S910113, R7S910115,
		R7S910115_M3, R7S910116, R7S910116_M3, R7S910117, R7S910117_M3,
		R7S910118, R7S910118_M3, R7S910125, R7S910126, R7S910127, R7S910128, R7S910135, R7S910136
		N/ 3510120, N/ 3510133, N/ 3510130
Synergy	S1JA	R7FS1JA783A01CFM, R7FS1JA783A01CNE, R7FS1JA783A01CNF,
-1	0 207 1	R7FS1JA782A01CBT, R7FS1JA783A01CFJ

S124	R7FS124762A01CLM, R7FS124763A01CFL, R7FS124763A01CFM, R7FS124772A01CLM, R7FS124773A01CFL, R7FS124773A01CFM, R7FS124773A01CNB, R7FS124773A01CNE, R7FS124773A01CNF
S128	R7FS128782A01CLM, R7FS128783A01CFJ, R7FS128783A01CFL, R7FS128783A01CFM, R7FS128783A01CNE, R7FS128783A01CNG
\$3A1	R7FS3A17C2A01CLK, R7FS3A17C3A01CFB, R7FS3A17C2A01CBJ, R7FS3A17C2A01CLJ, R7FS3A17C3A01CFM, R7FS3A17C3A01CFP, R7FS3A17C3A01CNB
\$3A3	R7FS3A37A2A01CLK, R7FS3A37A3A01CFB, R7FS3A37A2A01CBJ, R7FS3A37A2A01CLJ, R7FS3A37A3A01CFP, R7FS3A37A3A01CFM, R7FS3A37A3A01CNB
\$3A6	R7FS3A6782A01CLJ, R7FS3A6783A01CFL, R7FS3A6783A01CFM, R7FS3A6783A01CFP, R7FS3A6783A01CNB, R7FS3A6783A01CNE, R7FS3A6783A01CNF
S3A7	R7FS3A77C2A01CLK, R7FS3A77C3A01CFB, R7FS3A77C2A01CBJ, R7FS3A77C3A01CFP, R7FS3A77C2A01CLJ, R7FS3A77C3A01CFM, R7FS3A77C2A01CNB, R7FS3A77C3A01CNB
S5D5	R7FS5D57A2A01CLK, R7FS5D57A3A01CFB, R7FS5D57A3A01CFP, R7FS5D57C2A01CLK, R7FS5D57C3A01CFB, R7FS5D57C3A01CFP
S5D9	R7FS5D97C2A01CBG, R7FS5D97C3A01CFC, R7FS5D97C2A01CLK, R7FS5D97C3A01CFB, R7FS5D97C3A01CFP, R7FS5D97E2A01CBG, R7FS5D97E3A01CFC, R7FS5D97E2A01CLK, R7FS5D97E3A01CFB, R7FS5D97E3A01CFP
\$7G2	R7FS7G27H2A01CBD, R7FS7G27G2A01CBD, R7FS7G27H2A01CBG, R7FS7G27G2A01CBG, R7FS7G27H2A01CFC, R7FS7G27H3A01CFC, R7FS7G27G2A01CFC, R7FS7G27G3A01CFC, R7FS7G27H2A01CLK, R7FS7G27G2A01CLK, R7FS7G27H3A01CFB, R7FS7G27G3A01CFB, R7FS7G27G3A01CFP



2.2 Code Generator & Smart Configurator Support

CPU	Family	Devices
		R5F10CGB, R5F10CGC, R5F10CGD, R5F10CLD, R5F10CMD, R5F10CME,
	D1A	R5F10DGC, R5F10DGD, R5F10DGE, R5F10DLD, R5F10DLE, R5F10DMD,
	DIA	R5F10DME, R5F10DMF, R5F10DMG, R5F10DMJ, R5F10DPE, R5F10DPF,
		R5F10DPG, R5F10DPJ, R5F10TPJ
		R5F10968, R5F1096A, R5F1096B, R5F1096C, R5F1096D, R5F1096E, R5F109AA,
	F10	R5F109AB, R5F109AC, R5F109AD, R5F109AE, R5F109BA, R5F109BB, R5F109BC,
	F12	R5F109BD, R5F109BE, R5F109GA, R5F109GB, R5F109GC, R5F109GD, R5F109GE,
		R5F109LA, R5F109LB, R5F109LC, R5F109LD, R5F109LE
		R5F10A6A, R5F10A6C, R5F10A6D, R5F10A6E, R5F10AAA, R5F10AAC, R5F10AAD,
		R5F10AAE, R5F10ABA, R5F10ABC, R5F10ABD, R5F10ABE, R5F10AGA, R5F10AGC,
		R5F10AGD, R5F10AGE, R5F10AGF, R5F10AGG, R5F10ALC, R5F10ALD, R5F10ALE,
	F13	R5F10ALF, R5F10ALG, R5F10AME, R5F10AMF, R5F10AMG, R5F10BAC,
	1 10	R5F10BAD, R5F10BAE, R5F10BAF, R5F10BAG, R5F10BBC, R5F10BBD, R5F10BBE,
		R5F10BBF, R5F10BBG, R5F10BGC, R5F10BGD, R5F10BGE, R5F10BGF, R5F10BGG,
		R5F10BLC, R5F10BLD, R5F10BLE, R5F10BLF, R5F10BLG, R5F10BME, R5F10BMF,
RL78		R5F10BMG
		R5F10PAD, R5F10PAE, R5F10PBD, R5F10PBE, R5F10PGD, R5F10PGE, R5F10PGF,
	F14	R5F10PGG, R5F10PGH, R5F10PGJ, R5F10PLE, R5F10PLF, R5F10PLG, R5F10PLH,
	114	R5F10PLJ, R5F10PME, R5F10PMF, R5F10PMG, R5F10PMH, R5F10PMJ, R5F10PPE,
	_	R5F10PPF, R5F10PPG, R5F10PPH, R5F10PPJ
		R5F113GK, R5F113GL, R5F113LK, R5F113LL, R5F113MK, R5F113ML, R5F113PG,
	F15	R5F113PH, R5F113PJ, R5F113PK, R5F113PL, R5F113TG, R5F113TH, R5F113TJ,
		R5F113TK, R5F113TL
	F1E	R5F11KLE, R5F11LLG
	G10	R5F10Y14, R5F10Y16, R5F10Y17, R5F10Y44, R5F10Y46, R5F10Y47
	G11	R5F1051A, R5F1054A, R5F1056A, R5F1057A, R5F1058A
		R5F10266, R5F10267, R5F10268, R5F10269, R5F1026A, R5F10277, R5F10278,
	642	R5F10279, R5F1027A, R5F102A7, R5F102A8, R5F102A9, R5F102AA, R5F10366,
	G12	R5F10367, R5F10368, R5F10369, R5F1036A, R5F10377, R5F10378, R5F10379,
		R5F1037A, R5F103A7, R5F103A8, R5F103A9, R5F103AA



G13	R5F1006A, R5F1006C, R5F1006D, R5F1006E, R5F1007A, R5F1007C, R5F1007D, R5F1007E, R5F1008A, R5F1008C, R5F1008D, R5F1008E, R5F100AA, R5F100BD, R5F100BE, R5F100AF, R5F100AG, R5F100CA, R5F100CC, R5F100CC, R5F100CE, R5F100EG, R5F100EA, R5F100EA, R5F100CA, R5F100CC, R5F100CE, R5F100CF, R5F100CG, R5F100EA, R5F100FA, R5F100FC, R5F100FD, R5F100FF, R5F100FG, R5F100FH, R5F100FJ, R5F100FC, R5F100FD, R5F100GA, R5F100GC, R5F100GD, R5F100GF, R5F100GF, R5F100GG, R5F100GH, R5F100GJ, R5F100GC, R5F100GD, R5F100JC, R5F100JD, R5F100JE, R5F100GH, R5F100GJ, R5F100GK, R5F100GL, R5F100JC, R5F100JD, R5F100JE, R5F100JG, R5F100JH, R5F100JJ, R5F100JK, R5F100JJ, R5F100LK, R5F100LD, R5F100JG, R5F100JH, R5F100JJ, R5F100JK, R5F100JL, R5F100LK, R5F100LD, R5F100JG, R5F100H, R5F100JG, R5F100JK, R5F100JL, R5F100LK, R5F100LL, R5F100JG, R5F100H, R5F100H, R5F100H, R5F100JL, R5F100LK, R5F100LL, R5F100FG, R5F100HF, R5F101GA, R5F100H, R5F100H, R5F100SH, R5F100JG, R5F100FG, R5F100PH, R5F100FJ, R5F100PK, R5F1016D, R5F1016B, R5F1017A, R5F1017C, R5F1017D, R5F101AD, R5F1018A, R5F1018C, R5F1018D, R5F1018E, R5F101AA, R5F101AC, R5F101AD, R5F101BF, R5F101AF, R5F101AG, R5F101BA, R5F101AA, R5F101AC, R5F101AD, R5F101BF, R5F101FA, R5F101CC, R5F101FD, R5F101FF, R5F101FF, R5F101FH, R5F101FA, R5F101FC, R5F101FD, R5F101FF, R5F101FF, R5F101FH, R5F101FF, R5F101FH, R5F101FJ, R5F101FC, R5F101GG, R5F101GG, R5F101AG, R5F101FH, R5F101FJ, R5F101FC, R5F101FL, R5F101GG, R5F101GC, R5F101GB, R5F101FH, R5F101FJ, R5F101FC, R5F101GF, R5F101GG, R5F101GG, R5F101FH, R5F101JD, R5F101FL, R5F101FL, R5F101GG, R5F101GC, R5F101GD, R5F101FH, R5F101JD, R5F101FL, R5F101GF, R5F101GG, R5F101GD, R5F101JH, R5F101JD, R5F101JF, R5F101JF, R5F101JF, R5F101GG, R5F101JH, R5F101JJ, R5F101JF, R5F101JF, R5F101JF, R5F101JJ, R5F101JK, R5F101JH, R5F101JF, R5F101JF, R5F101JF, R5F101JH, R5F101JH, R5F101JH, R5F101JH, R5F101JF, R5F101JF, R5
G14	R5F104AA, R5F104AC, R5F104AD, R5F104AE, R5F104AF, R5F104AG, R5F104BA, R5F104BC, R5F104BD, R5F104BE, R5F104BF, R5F104BG, R5F104CA, R5F104CC, R5F104CD, R5F104CE, R5F104CF, R5F104CG, R5F104EA, R5F104EC, R5F104ED, R5F104EE, R5F104EF, R5F104EG, R5F104EH, R5F104FA, R5F104FC, R5F104FD, R5F104FE, R5F104FF, R5F104FG, R5F104FH, R5F104FJ, R5F104GA, R5F104GC, R5F104GD, R5F104GE, R5F104FG, R5F104GG, R5F104GH, R5F104GJ, R5F104GK, R5F104GL, R5F104JC, R5F104JD, R5F104JE, R5F104JF, R5F104JG, R5F104JH, R5F104JJ, R5F104LC, R5F104LD, R5F104LE, R5F104LF, R5F104LG, R5F104HH, R5F104LJ, R5F104LK, R5F104LL, R5F104MF, R5F104MG, R5F104MH, R5F104MJ, R5F104MK, R5F104ML, R5F104PF, R5F104PG, R5F104PH, R5F104PJ, R5F104PK, R5F104PL
G1A	R5F10E8A, R5F10E8C, R5F10E8D, R5F10E8E, R5F10EBA, R5F10EBC, R5F10EBD, R5F10EBE, R5F10EGA, R5F10EGC, R5F10EGD, R5F10EGE, R5F10ELC, R5F10ELD, R5F10ELE
G1C	R5F10JBC, R5F10JGC, R5F10KBC, R5F10KGC
G1D	R5F11AGG, R5F11AGH, R5F11AGJ
G1E	R5F10FLC, R5F10FLD, R5F10FLE, R5F10FMC, R5F10FMD, R5F10FME
	R5F11B7C, R5F11B7E, R5F11BBC, R5F11BBE, R5F11BCC, R5F11BCE, R5F11BGC,
G1F	R5F11BGE, R5F11BLC, R5F11BLE
G1G	R5F11EA8, R5F11EAA, R5F11EB8, R5F11EBA, R5F11EF8, R5F11EFA
G1H	R5F11FLJ, R5F11FLK, R5F11FLL
H1D	R5F11NGF, R5F11NGG, R5F11NLF, R5F11NLG, R5F11NME, R5F11NMF, R5F11NMG, R5F11PLF, R5F11PLG, R5F11RMG
I1A	R5F1076C, R5F107AC, R5F107AE, R5F107DE

	I1B	R5F10MME, R5F10MMG, R5F10MPE, R5F10MPG
	I1C	R5F10NLE, R5F10NLG, R5F10NME, R5F10NMG, R5F10NMJ, R5F10NPJ
	I1D	R5F11768, R5F1176A, R5F11778, R5F1177A, R5F117A8, R5F117AA, R5F117AC, R5F117BA, R5F117BC, R5F117GA, R5F117GC
	I1E	R5F11CBC, R5F11CCC
	L12	R5F10RB8, R5F10RBA, R5F10RBC, R5F10RF8, R5F10RFA, R5F10RFC, R5F10RG8, R5F10RGA, R5F10RGC, R5F10RJ8, R5F10RJA, R5F10RJC, R5F10RLA, R5F10RLC
	L13	R5F10WLA, R5F10WLC, R5F10WLD, R5F10WLE, R5F10WLF, R5F10WLG, R5F10WMA, R5F10WMC, R5F10WMD, R5F10WME, R5F10WMF, R5F10WMG
	L1A	R5F11MMD, R5F11MME, R5F11MMF, R5F11MPE, R5F11MPF, R5F11MPG
	L1C	R5F110ME, R5F110MF, R5F110MG, R5F110MH, R5F110MJ, R5F110PE, R5F110PF, R5F110PG, R5F110PH, R5F110PJ, R5F111ME, R5F111MF, R5F111MG, R5F111MH, R5F111MJ, R5F111PE, R5F111PF, R5F111PG, R5F111PH, R5F111PJ
	110	R5F51101, R5F51103, R5F51104, R5F51105, R5F5110H, R5F5110J
	111	R5F51111, R5F51113, R5F51114, R5F51115, R5F51116, R5F51117, R5F51118, R5F5111J
	113	R5F51135, R5F51136, R5F51137, R5F51138
	130	R5F51303, R5F51305
	230	R5F52305, R5F52306
	231	R5F52315, R5F52316, R5F52317, R5F52318
RX	23T	R5F523T3, R5F523T5
	24T	R5F524T8, R5F524TA, R5F524TB, R5F524TC, R5F524TE
	24U	R5F524UB, R5F524UC, R5F524UE
	64M	R5F564MF, R5F564MG, R5F564MJ, R5F564ML
	651	R5F56514, R5F56517, R5F56519
	65N	R5F565N4, R5F565N7, R5F565N9
	66T	R5F566TA, R5F566TE
	71M	R5F571MF, R5F571MG, R5F571MJ, R5F571ML
RZ	T1	R7S910001, R7S910002, R7S910006, R7S910007, R7S910011, R7S910013, R7S910015, R7S910016, R7S910017, R7S910018, R7S910025, R7S910026, R7S910027, R7S910028, R7S910035, R7S910036, R7S910101, R7S910102, R7S910106, R7S910107, R7S910111, R7S910113, R7S910115, R7S910116, R7S910117, R7S910118, R7S910125, R7S910126, R7S910127, R7S910128, R7S910135, R7S910136



3. Smart Manual Support

Smart manual support is delivered independently of e² studio releases when available. The following devices are available as of January 2019:

- RX62G
- RX62T
- RX63N
- RX63T
- RX64M
- RX71M
- RX110
- RX111
- RX113
- RX210
- RX220
- RX631
- RX651
- RX65N
- RX24U
- RX24T
- RX66T
- RL78/L12
- RL78/L13
- RL78/G14
- RL78/G13
- RL78/G12
- RL78/G11
- RL78/G10
- RL78/G1F
- RZ/A2M



4. What is new in 7.3.0?

Component	Device	Description
		The download and import RZ/A2M peripheral drivers and middleware to e2 studio project is now supported in the Smart Configurator for RZ/A2M.
Smart Configurator	RZ	The middleware and driver included in the RZ/A2M Software Core Package can be downloaded and imported easily using Smart Configurator.
		For details, refer to the help topic "Smart Configurator for RZ/A2M" linked from [Help]->[Help Contents] menu in e2 studio.
		The Memory Usage view has been updated to include the device memories of selected project's device.
		Memory areas of device are shown on the view with their corresponding information bar and sections which belong to each memory area.
		The color of each section corresponds to the memory group classification. The color of each group is shown on Group Size region pane of the view. For details, refer to Device Memory Usage part in the Memory Usage help.
		Intercy User 12 Bency Report Manage Data
Memory Usage plugin		Ster 00000000 Manualization Concurst 102 hymol 6.0000000 Manualization Instructed Data 0 hymol 6.0000000 Manualization Data 0 hymol 6.0000000 Manualization
		B Ank 3 kyelo 3 kyelo Others 3 kyelo 3 kyelo Sci00000 4 kyelo 3 kyelo Sci00000 5 kyelo 3 kyelo
		6/00/100 Expense, 0/03/026# 0/03/026# 0/03/026# 0/03/026#
		6x00019800 6x00019979 6x00019979 6x00019979 6x00019979 6x00019979 6x0001997
		6/007497 6/0074700 Internation 0/0041bpt001(L00%)
		Governme Governme Geter
		Section Object Speeds Site adverses End addreses Site (http://dimensionality.com/ditauto.com/ditauto.com/dimensionality.com/dimensistauto.com/dimens
		overs Constant 0.0000014 0.0000017 13.4 opticultytic Constant 0.0000016 0.000001 4 accoly_jid Constant 0.0000001 0.0000001 10 Instant Poggmen 0.0000001 0.0000001 10
		Contrastin 0.00000068 0 Jot Pogara 0.0000068 0.000017 05 Avides Ohrsy 0.000018 0.000017 05 pr Contact 0.000018 0 pr Contact 0.000018
		Index Constant 60000000 0
Device Support		New devices added for RH850:
RH850		R7F701442, R7F701462 - RH850/E1M-S2

- RH850/E1M-S2 R7F701215, R7F701216



Debug Only No executable file selected for debugging			Ď	-			
Debug Harbare (E1 (8455)) (Simulari) Device Decutable Executable Paths	Device Settings Target Device:		Unleck Drois	RH650 >>	RH450/F1L RH450/F1L RH450/F1L RH450/F1M-5 RH450/F1M-52 RH450/F1H RH450/F1M	> > > > > > >	
					RH850/P1M RH850/P1H+C RH850/P1M+C RH850/P1M+E RH850/P1L+C RH850/P1L+C	> > > > >	
					RH850/P1H-C RH850/P1M-C RH850/P1M-E RH850/P1L-C RH850/P1L-C RH850/D1L1 RH850/D1L1	3 3 3 3 3	R7F701404
(*) (* Back	Nest >	finah	Cancel		RH850/P1H-C RH850/P1M-C RH850/P1M-E RH850/P1L-C RH850/D1L1))))	R7F701404 R7F701405

The "Raw" registers format has been added to the Registers view "Number Format" menu item. This new selection can be used to show the raw value of the floating-point registers.

ame			Value		De	철 🚾 🖯 🗂 년 🎨	
Hit Gene	ral Re	egisters			Ge	neral Purpose and FPU Register Group	
MIT e MIT e MIT e		Select All Copy Registers	Ctrl+A Ctrl+C				
3000 m		Number Format	>	Hex	1		
1111 ×		Find	Ctrl+F	Decimal			
kame : r0 Hex:0: Decim Octal :		Display Register As Vector Of Add Register Group Restore Default Register Groups Watch	>	Octal Binary Float Default			>
	-			Raw		22 E 15 7 -	2

The Page Table display in the MMU view has been improved to display not only value but also value's meaning.

The view now also displays more information:

MMU 🛛			😑 😂 🔕 🗒		E
arget : Virtual a	ddress 🗸 Address :	~	Search		
Number	XN	Domain	NS	Raw data[31:0]	1
3710	Execute never(XN=1)	Domain15(1:Client)	Non-secure(NS=1)	0xE7D801F2	
3711	Execute never(XN=1)	Domain15(1:Client)	Non-secure(NS=1)	0xE7E801F2	
3712	Execute never(XN=1)	Domain15(1:Client)	Non-secure(NS=1)	0xE7F801F2	
3713	Execute never(XN=1)	Domain15(1:Client)	Secure(NS=0)	0xE8000DF2	
3714	Execute never(XN=1)	Domain15(1:Client)	Secure(NS=0)	0xE8100DF2	
3715	Execute never(XN=1)	Domain15(1:Client)	Secure(NS=0)	0xE8200DF2	
3716	Execute never(XN=1)	Domain15(1:Client)	Secure(NS=0)	0xE8300DF2	
3717	Execute never(XN=1)	Domain15(1:Client)	Secure(NS=0)	0xE8400DF2	
3718	Execute never(XN=1)	Domain15(1:Client)	Secure(NS=0)	0xE8500DF2	
3719	Execute never(XN=1)	Domain15(1:Client)	Secure(NS=0)	0xE8600DF2	
3720	Execute never(XN=1)	Domain15(1:Client)	Secure(NS=0)	0xE8700DF2	
3721	Execute never(XN=1)	Domain15(1:Client)	Secure(NS=0)	0xE8800DF2	
3722	Execute never(XN=1)	Domain15(1:Client)	Secure(NS=0)	0xE8900DF2	
3723	Execute never(XN=1)	Domain15(1:Client)	Secure(NS=0)	0xE8A00DF2	
270 <i>4</i>	Everyte never(YN-1)	Domain15/1(Client)	(n-2N/artica2	OVERROODE2	,

MMU View

CDT



Improve point is following table.

Column Name	Improvement				
Domain	Add corresponding DACR register's value's meaning.				
S,NS,XN,NG,AP[2:0]	Add value's meaning.				
Raw data[31:0]	Add this column for page table entry 32bit descriptor's raw data.				

The MMU view has been updated to allow the customization of saved MMU settings.

	e ² Save MMU settings X			
	File name(*.csv)			
	Range of entry number to save (decimal value) Image 1 - 4096			
	Select columns to save			
MMU View	✓ Entry Type ✓ Virtual/Start Address ✓ Physical Address ✓ Memory Type ✓ TEX[2:0] ✓ C ✓ B ✓ Domain ✓ AP[2:0] ✓ XN ✓ S ✓ nG ✓ NS ✓ Raw data[31:0] ✓ ✓			
	 ✓ Save CP15 register ✓ Save secondary page table entry OK Cancel 			
	 Setting items are as follows: What range of entries to save. What page table's columns to save. Whether we save the CP15 register or not. Whether we save secondary page table entries. 			
Debugging RX,	e2 studio 7.3 has improved I/O library support to work with both the RX hardware and simulator debugger configurations.			
Project	Improvement points:			
Generation CCRX	+ Changed "Use I/O library" label to "Use Renesas Debug Virtual Console" label			



e ²		<u></u>	□ ×
New Renesas CC-RX Executable Project			-
Settings The Contents of Files to be Generated			4
What kind of initialization routine would you like to create?			
Use Renesas Debug Virtual Console			
Number of I/O Streams:			
? < <u>B</u> ack	<u>N</u> ext >	<u>F</u> inish	Cancel

+ Corrected resetprg.c file for C/C++ projects

+ Excluded "lowlvl.src" and "lowsrc.c" on Release configuration + Specified "-define=DEBUG_CONSOLE" on HardwareDebug and Debug configuration

These changes will enable the Renesas debug Virtual Console to be used more effectively within e2 studio for all RX debugger configurations.

Download and import sample projects of FIT modules to the e2 studio project workspace is now supported in the Smart Configurator.

Software component configuration



Changing the version of r_bsp and FIT modules that have been added to the Smart Configurator project is now also supported in Smart Configurator.

Software	compor	nent con	figuration

	Components $\downarrow^{\mathfrak{a}}_{\mathbb{Z}} \boxdot \Rightarrow \checkmark$		
	10 T		
	type filter text		
	Startup Startup Generic r_bsp Drivers Communications r_can_rx Right-click FIT module and select Change version T_byteq Change version Remove		
	Reset to default		
	Download and import sample projects		
	Currently the libhover functionality for Smart Manual Software only invokes for calls through function pointer struct members (e.g. typical Synergy API function calls) and is only activated if the code looks like a function call.		
Libhover	Activates: g_sf_i2c_device0.p_api->open()		
	Does not activate: g_sf_i2c_device0.p_api->open		
	This has been improved to now activate on non-dereferenced function prototypes.		
	Information of some modules relating to debugger is now displayed in gdbserver console at launching stage, includes:		
GDB server	 Version of firmware files and FPGA Emulator type, revision and voltage Available now for RX, RL78 and RH850. 		



📮 Console 🐹 📄 🗙 🔆 🗟	: 2	🖳 🕶 📑 🕶 🗖	
rx_e20 HardwareDebug [Renesas GDB Ha	rdware Debugging]	Renesas GDB serve	r (Host
Connecting to E20, RX Target GDBServer endian Target power Starting target connection Firmware up to date at version Target endian (MDE pin USB bus power voltage is low.	: on '2.09.00.003'		^
Version Information:			
FFWE20RX600.dll	2.09.00.009		
BfwE20rx600.s LEVEL0	1.00.00.000		
LEVEL0	2.09.00.003		
Communi.dll	3.02.00.000		
EPGA	26		
Communication EPGA			
Trace Control FPGA	10		
Emulator Information:			
Emulator Board Revision	E20 Rev.2		
User Vcc	3.3 V		
User Bus Power	4.2 V		
User I/F Cable	38-pin cable		
Finished target connection		-	
GDB: 50209			
Target connection status - OK			
Starting download Finished download			
rinished download			
<			>

The Debug Console view can have the pin button set to "on", this brings the console to the front if there are standard input/output changes in the console.

Debug Console plugin

For details, refer to "RenesasDebug Virtual Console operations" section in "Renesas Debug Virtual Console" help.



The Smart Configurator has been updated to support RX23T, RX24T, RX24U group devices.

👔 man.e. 👔 heljentryje 👹 R023T sofg 12 🤲 🗂 📑 🖬 MCU Package 12 📓 MMU Layout

	Pin configuration	17 di	Type per function 🔹 Assi. 🕐 Default R.
	Hardware Re 🛞 🖂 🖓	Pin function 🤨 🔛 🔛 🗠 🕰	
	Type filter test	type filter test 🛛 🗛 🗢	
Smart Configurator		Enklish Function Assignment PP AD519 // Not anipped / II AD510 / Not anipped / II AD500 / Not anipped / II AD501 / Not anipped / II AD501 / Not anipped / II AD501 / Not anipped / II AD515 / Not anipped / II AD517 / Not anipped / II	
	Pin Function Pin Number Overview Baard Clocks Component	s (Pins Interrupts	Legend
Smart Browser	notification. If the check	lect the message categories t box of a category is unchecker that category.	-



- D

When using multicore debug, it is now possible to filter the breakpoint for core automatically. This is achieved by the following toolbar button on the Breakpoints view.



After pressing this button, it will lock the breakpoints to only be sent to the active debugger session.

A GUI has implemented for editing the IO Register settings.

It has been made more convenient, so you can modify within the user interface directly.

Application

Debug Configuration



e ² Edit IO Register Settings X					
IO Register values applied after each reset and before download					
Address	Size		Value		
0x8c103	1 byte		0xff		
0x83872	4 bytes		0x0000fff	ff	
0x80006	2 bytes		0x5a03		
Address (hex)	Size (hex)	Value	(hex)		
	1 byte ∨				
Enter valid hex		Jes			
Insert	Insert Remove All Sections				
		C	Ж	C	Cancel

FreeRTOS project is supported for specific RX devices.

If user does not download FreeRTOS package into local PC yet, the e2 studio project generator can download the FreeRTOS package from the Renesas website in the same way as FIT module downloads.

			- 0 ×
New Revenue CC-RX I Select Institutio, device			
Testchain Broom al	MC/C	unabein.	Configurations 22 Constructions Tableg Configuration 19 200
Ð		- pat _ b	ed + Event Canad

Smart RX Configurator

Smart Configurator also supports FreeRTOS kernel configuration.

You can the configure FreeRTOS kenel within the user interface and then the Smart Configurator can generate the FreeRTOS kernel settings header file automatically.

Property	Value
- @ Configurations	
# configUSE_PREEMPTION	0
# configUSE_IDLE_HOOK	1
# configUSE_TICK_HOOK	1
configTICK_RATE_HZ	1000
<pre>configMINIMAL_STACK_SIZE</pre>	140
<pre># configTOTAL_HEAP_SIZE</pre>	46080
# configMAX_TASK_NAME_LEN	12
# configUSE TRACE FACTLITY	1



Component	Device	Description
RX Device Support	RX	Support has been added for the RX66T device. This includes support for the Smart Configurator.

5. What is new in 7.2.0?



6. What is new in 7.1.0?

Component	Device	Description
RZ/A2	RZ	The RZ/A2 device family is now supported in e2 studio.
		New GCC for Renesas RZ Executable Project
		Select toolchain, device & debug settings
		Toolchain Settings Language:
		Language: C C C++ Toolchain: GCC ARM Embedded
		Toolchain Version: 6.3.1.20170620 V
		RTOS: Manage Toolchains
		Device Settings Configurations
		Target Device: R9A066043 Create Hardware Debug Configuration Unlock Devic EC-1
		Endian: Little RZ/A RZ/A1H >
		Project Type: Default RZ/A1L X RZ/A1LC RZ/A1LC X X
		RZ/A1LU > RZ/A1M >
		RZ/A2M PZ/A2M - 176pin > RZ/A2M - 256pin >
		RZ/A2M - 272pin
		RZ/A2M - 324pin R759210 (?) < Back
Configurator	RZ	The Smart Configurator now supports RZ/A2M group devices. Peripheral drives for RZ/A2M can be configured by the following functions.
	RZ	Peripheral drives for RZ/A2M can be configured by the following functions.
Configurator	RZ	Peripheral drives for RZ/A2M can be configured by the following functions. Basic Driver Settings: The drivers for clocks, pins and memory
Configurator	RZ	Peripheral drives for RZ/A2M can be configured by the following functions. Basic Driver Settings: The drivers for clocks, pins and memory management unit (MMU) that are a basic part of embedded software
Configurator	RZ	Peripheral drives for RZ/A2M can be configured by the following functions. Basic Driver Settings: The drivers for clocks, pins and memory
Configurator	RZ	 Peripheral drives for RZ/A2M can be configured by the following functions. Basic Driver Settings: The drivers for clocks, pins and memory management unit (MMU) that are a basic part of embedded softwa for RZ/A2M group devices can be configured within the Smart Configurator.
Configurator	RZ	 Peripheral drives for RZ/A2M can be configured by the following functions. Basic Driver Settings: The drivers for clocks, pins and memory management unit (MMU) that are a basic part of embedded softwa for RZ/A2M group devices can be configured within the Smart Configurator. The settings are configured using a dedicated user interface and the settings are configured using a dedicated user interface and the settings are configured using a dedicated user interface and the settings are configured using a dedicated user interface and the settings are configured using a dedicated user interface and the settings are configured using a dedicated user interface and the settings are configured using a dedicated user interface and the settings are configured using a dedicated user interface and the settings are configured using a dedicated user interface and the settings are configured using a dedicated user interface and the settings are configured using a dedicated user interface and the settings are configured using a dedicated user interface and the settings are configured using a dedicated user interface and the settings are configured using a dedicated user interface and the settings are configured using a dedicated user interface and the settings are configured using a dedicated user interface and the settings are configured using a dedicated user interface and the setting are configured using a dedicated user interface and the setting are configured using a dedicated user interface and the setting are configured using a dedicated user interface and the setting are configured using a dedicated user interface and the setting are configured using a dedicated user interface and the setting are configured using a dedicated user interface and the setting are configured using a dedicated user interface and the setting are configured user interface and the setting are configured user interface are configured user interface are configured user interface are configured user interface are configure
Configurator	RZ	 Peripheral drives for RZ/A2M can be configured by the following functions. Basic Driver Settings: The drivers for clocks, pins and memory management unit (MMU) that are a basic part of embedded softwa for RZ/A2M group devices can be configured within the Smart Configurator.
Configurator	RZ	 Peripheral drives for RZ/A2M can be configured by the following functions. Basic Driver Settings: The drivers for clocks, pins and memory management unit (MMU) that are a basic part of embedded softwar for RZ/A2M group devices can be configured within the Smart Configurator. The settings are configured using a dedicated user interface and the configuration when generated is reflected in your project's source
Configurator	RZ	 Peripheral drives for RZ/A2M can be configured by the following functions. Basic Driver Settings: The drivers for clocks, pins and memory management unit (MMU) that are a basic part of embedded softwa for RZ/A2M group devices can be configured within the Smart Configurator. The settings are configured using a dedicated user interface and the configuration when generated is reflected in your project's source code.
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Configurator	RZ	 Peripheral drives for RZ/A2M can be configured by the following functions. Basic Driver Settings: The drivers for clocks, pins and memory management unit (MMU) that are a basic part of embedded softwar for RZ/A2M group devices can be configured within the Smart Configurator. The settings are configured using a dedicated user interface and the configuration when generated is reflected in your project's source code. Clock Configuration Panel
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Configurator	RZ	Peripheral drives for RZ/A2M can be configured by the following functions. Basic Driver Settings: The drivers for clocks, pins and memory management unit (MMU) that are a basic part of embedded softwar for RZ/A2M group devices can be configured within the Smart Configurator. The settings are configured using a dedicated user interface and the configuration when generated is reflected in your project's source code. Clock Configuration Panel Clocks configuration
Configurator	RZ	Peripheral drives for RZ/A2M can be configured by the following functions. Basic Driver Settings: The drivers for clocks, pins and memory management unit (MMU) that are a basic part of embedded softwar for RZ/A2M group devices can be configured within the Smart Configurator. The settings are configured using a dedicated user interface and the configuration when generated is reflected in your project's source code. Clock Configuration Panel Clocks configuration
Z/A2 Smart Configurator Support	RZ	Peripheral drives for RZ/A2M can be configured by the following functions. Basic Driver Settings: The drivers for clocks, pins and memory management unit (MMU) that are a basic part of embedded softwar for RZ/A2M group devices can be configured within the Smart Configurator. The settings are configured using a dedicated user interface and the configuration when generated is reflected in your project's source code. Clock Configuration Panel Clocks configuration
Configurator	RZ	Peripheral drives for RZ/A2M can be configured by the following functions. Basic Driver Settings: The drivers for clocks, pins and memory management unit (MMU) that are a basic part of embedded softwar for RZ/A2M group devices can be configured within the Smart Configurator. The settings are configured using a dedicated user interface and the configuration when generated is reflected in your project's source code. Clock Configuration Panel Clocks configuration
Configurator	RZ	Peripheral drives for RZ/A2M can be configured by the following functions. Basic Driver Settings: The drivers for clocks, pins and memory management unit (MMU) that are a basic part of embedded softwar for RZ/A2M group devices can be configured within the Smart Configurator. The settings are configured using a dedicated user interface and the configuration when generated is reflected in your project's source code. Clock Configuration Panel View of the setting of the



Pin Configuration Panel

² in Numb	er							
Filter by p	oin name							
Pin Nu	Pin Name	Function	Directi	Output L	Interru	Drive Co	Initialize	Remark A
A10	PE_6/ET0_MDIO/VIO_D2/SSIRxD0/	" PE_6	1	None	/ Disa	None	By GPL	10
A11	PL_2/MD_BOOT2/IRQ6	1 PL_2	1	None	/ Enabl	None	By GPI	1
A12	PE_5/ET0_MDC/VIO_D3/SSITxD0/M	' PE_5	1	None	/ Enabl	None	By GPI	
A13	P8_4/A4/DV0_DATA13/SSL00/SSIR	/ DV0_D	1	None	/ Disa	None	By GPI	
A14	P8_6/A6/DV0_DATA11/MOSI0/SSIL	' DV0_D	1	None	/ Disa	None	By GPI	
A15	PE_4/ET0_CRS/VIO_D4/SSILRCK0/	ETO_CRS	1	None	/ Disa	None	By GPL	
A16	P9_1/A9/DV0_DATA8/RxD4/SSILRC	" DV0_D	1	None	/ Disa	None	By GPL	
A17	PVcc	PVcc.						Read or
A18	Vss	Vss.						Read or
A19	PE_1/ET0_RXD0/VIO_D7/RxD2/POE	' PE_1	10	/ High	None	4mA	By GPI	
A20	PA_4/A20/DV0_DATA9/LCD0_DATA	/ DV0_D	1	None	/ Disa	None	By GPI	
A21	CKIO	/ Not assi	None	-	-	-		
A22	Vss	Vss						Read or v
<								>

MMU Configuration Panel

Use N	MU Configuration								1
Page Ta	ble								
Name	Virtual Address	Physical Address	Size	Attributes	NS	AP[2:0]	XN	Add	
	0x0C000000	0x0C000000	0x4000000	Normal	Non-sec	Read/Wr	Executa	Remove	
	0x18000000	0x18000000	0x7000000	Reserved	Non-sec	Access i	Execute		
	0x1F000000	0x1F000000	0x1000000	Strongly	Secure (Read/Wr,	Execute	Edit	
	0x20000000	0x20000000	0x100000	Normal	Non-sec	Read/Wr	Executa		
	0x30000000	0x30000000	0x100000	Normal	Non-sec	Read/Wr	Executa	Import	
	0x40000000	0x40000000	0x100000	Normal	Non-sec	Read/Wr	Executa		
	0x50000000	0x50000000	0x100000	Normal	Non-sec	Read/Wr	Executa	Export	- 1
	0x60000000	0x60000000	0x100000	Normal	Non-sec	Read/Wr	Executa		
	0x70000000	0x20000000	0x100000	Strongly	Non-sec	Read/Wr	Execute		
	0x80000000	0x80000000	0x400000	Normal	Non-sec	Read/Wr	Executa		
	0x82000000	0x80000000	0x400000	Normal	Non-sec	Read/Wr	Executa		
	0x94000000	0x0C000000	0x4000000	Normal	Non-sec	Read/Wr	Executa		
	0xA0000000	0x30000000	0x100000	Strongly	Non-sec	Read/Wr	Execute		
	0x80000000	0x40000000	0x100000	Normal	Non-sec	Read/Wr	Executa		
	0xC0000000	0x50000000	0x100000	Stronaly	Non-sec	Read/Wr	Execute		

Software Component Settings: The drivers for peripheral functions that are used in sample programs can be configured on the smart configurator.

The available configuration depends on each specific driver and the configuration when generated is reflected in your project's source code.

Software Component Configuration Panel (Example: SCIFA driver)

omponents 🛛 🗄 🖻 🖷 🍻 🔻	Configure		
type filter text	Property Genfigurations	Value	^
Y 🗁 Drivers	# SCIFA communication modes	Asynchronous mode	
Communications	# SCIFA Bit Rate (bps)	115200	
💣 scifa0	# Clock select	Internal clock input	
	# Asynchronous Base Clock Select	Use clock as 16x mode	
	# Data Bit Length	8 Bits	
	# Parity Enable	Unused	
	# Parity Mode	Even Parity	
	# Stop Bit Lenght(s)	1 bit	
	# Noise Cancellation	Unused	
	# Data Transfer Direction Select	LSB-first	
	# Loop back test	Unused	
	# Modem Control Enable	Unused	
	# RTS# output active trigger numb	15	~
	Macro definition: SCIFA_TX_DATA_MOD	DE	0



studio 7.3.0)	Release Note
MMU View	RZ	RZ/A1 and RZ/A2 both support a memory management unit (MMU) which needs special debugging support. When using MMU, it is necessary to prepare a page table in the memory in addition to setting the MMU register.
		The page table for MMU of RZ/A1 and RZ/A2 is composed of a combination of a primary table and a secondary table. In each page table entry, it is necessary to make the following setting.
		 Physical address corresponding to the virtual address Enable/disable of data cache and cache operation (write back, write through, etc) Specification of memory type (normal memory, device memory, strong reorder memory) Access permission (permission to read / write in privileged mode / non-privileged mode)
		To support this feature of the RZ/A1 and RZ/A2 devices a new plugin has been added to e2 studio named the MMU view.



The view is accessible from the [Renesas Views->Debug->MMU]
menu item.

	every, endouring, entre	00400, 0X1800400, 0X2000400	, 085200400, 08500040	00, 0x4600400, 0x50004	00, 085800400,									
Number	Entry Type	Virtual/Start Address	Physical Address	Memory Type	TEX[2:0]	с	В	Domain	AP[2:0]	XN	s	nG	NS	
921_1	Small Page	0x39800000	0x00000000	Strongly Order	000	0	0		000	0	0	0	-	
y 931	Page Table	0x20037000						0					0	
931_1	Small Page	0x3A200000	0x00000000	Strongly Order	000	0	0		000	0	0	0	-	
v 941	Page Table	0x20038000						0					0	
941_1	Small Page	0x3AC00000	0x00000000	Strongly Order	000	0	0		000	0	0	0		
v 951	Page Table	0x20039000			+	+		0					0	
951_1	Small Page	0x38600000	0x00000000	Strongly Order	000	0	0	-	000	0	0	0		
✓ 961	Page Table	0x20035000			-			0					0	
961_1	Small Page	0x3C000000	0x00000000	Strongly Order	000	0	0		000	0	0	0		
971	Page Table	0x20036000						0				-	0	
971_1	Small Page	0x3CA00000	0x00000000	Strongly Order	000	0	0		000	0	0	0	-	
✓ 981	Page Table	0x20037000						0			-		0	
981_1	Small Page	0x3D400000	0x0000000x0	Strongly Order	000	0	0		000	0	0	0		
✓ 991	Page Table	0x20038000						0			÷		0	
991_1	Small Page	0x3DE00000	0x00000000	Strongly Order	000	0	0		000	0	0	0		
· 1001	Page Table	0x20039000			-	-		0			-		0	
1001_1	Small Page	0x3E800000	0x0000000x0	Strongly Order	000	0	0		000	0	0	0	-	
1007	Section	0x3EE00000	0x00000000	Strongly Order	000	0	0	0	000	0	0	0	0	
2031	Section	0x7EE00000	0x00000000	Strongly Order	000	0	0	0	000	0	0	0	0	
3055	Section	0x8EE00000	0x00000000	Strongly Order	000	0	0	0	000	0	0	0	0	
10.90	Austra	A. ##########	A.AAAAAAAA	Courses Courses					AAA	A.				

This view is intended to allow easy confirmation of the MMU IOR setting value. It also offers functionality to convert from logical addresses to physical addresses.

Page 24 of 57



Dun Brook	un Break All A new feature has been added to the e2 studio that						
Timer	A now footure has been added to the o2 studie the						
		This offers a fast way to automatically see the last execuperformance timing in the e2 studio status bar.	ition				
		13 14 00000166 ● void main(void) 15 • volatile int a = 0; 16 • volatile int a = 0; 17 • while (1) 19 • a++; 20 00000169 • a++; 21 0000016e • if (a>10) 24 • if (a>10) a=0: • • • • © Console 🛛 🖉 Tasks இ Proble () Execut () Smart • • RL_Sim Debug [Renesas Simulator Debugging (RX, RL78)] Renesas GDB • • Options bytes, writing to address 0x000000c0 with data • • Correct values for address 0x000000c3, Options byte so • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • •<	server (Host) a ttttet04				
		Security ID, writing to address 0x000000c4 with data (Debug monitor area 2, writing to address 0x000000ce w: Finished download					
		PC timing (time or measu	e uracy of rement or iod used.				
		The view shows the current program counter (PC), the la timing either in time or CPU cycles and the accuracy or r method used.					
		Most devices and emulator combinations are supported levels. Please see the table below:	to differing				

Device	Debugger	Support				
	Simulator	Not supported				
RX	E1/E20/E2/E2 LITE	Emulator is used to read the total time measurement counter (Hardware support)				
	EZ/J-Link	System Time				
RH850	E1	Debug Clock (CPU clock is used if the Debug Clock is 0)				
Synergy S1 Series (Cortex M0/M0+)	J-Link	System Time				
Synergy S3, S5, S7 Series	J-Link	Data Watchpoint and Trace Unit – Cycle Count and				



		number of overflows calculated using the System Time
RZ	J-Link	Performance Monitoring Unit – Cycle Count and number of overflows calculated using the System Time
DI 70	Simulator	Accessing the simulated hardware timer resources.
RL78	E1/E20/E2/E2 LITE	Emulator is used to access the timer resources of hardware.

Device Migration All

A new device migration feature has been added to e2 studio. This enables an easier method for you to transition from one device to another.

The migration is possible from one device to another within the same series. For example, you can migrate from a RX62N to a RX65N. You cannot migrate from one device family to another. E.g. RX to RZ.

The Change Device feature is available on the project pop-up and the Project menu item via the "Change Device" menu item.

陷 Project Explorer 🛛		🖃 🚭	▽	Proi	ect Renesas Views	Run Win	dow	Help	
> 🚰 RL_Sim > 🚰 RX_Sim [Deb u	New Go Into	>	1		Open Project Close Project Open Synergy Config			Thep	
	Save build settings report		i i	010	Build All Build Configurations Build Project	;	Ctrl	+Alt+B > Ctrl+B	st
**	Change Device Run C/C++ Code Analysis		ł		Build Working Set Clean			>	
i 🗮	System Explorer Command Prompt	>			Build Automatically Build Targets			>	
	Configure Properties	Alt+Enter		e²	C/C++ Index Update All Depender Change Device	ncies		> Alt+D	
					Properties				

Once selected a wizard is displayed leading the user through the migration process. The first page allows you to choose the new device.



e ² Refactoring				—	
hange Devic	2				
Select the new	device for RX_Sim				
Current: R5F511	1JAxFM				
Target Device:	R5F51101AxLM				
					Unlock Devices
?		< <u>B</u> ack	<u>N</u> ext >	<u>F</u> inish	Cancel
0		< Dack	INCVI >	Tunan	Cancer

Any possible problems will be displayed on the next page of the wizard. In most circumstances the wizard will report no errors.

Note, once has been competed it cannot be undone so please ensure you have backed up your files before invoking this operation.

e ² Refactoring —		×
Change Device Review the information provided in the list below. Click 'Next >' to view the next item or 'Finish'.		
Found problems	,	66
This change cannot be undone. Please make sure you backup this project before continuing.		
No context information available		
() (Sack Next > Einish	Cance	el

The next step of the wizard allows you to choose exactly what is being migrated. It gives fine control over migrating the debugger launch configuration, build settings and project files.

e ² Refactoring		—		×
Change Device The following changes are necessary	to perform the refactoring.			1
Changes to be performed			₽ 0	
 ✓				
	No preview available			
?	< <u>B</u> ack <u>N</u> ext >	<u> </u>	Cance	el

Expanding the project files item shows which files are going to be generated and the differences from those in the project already. A difference tool shows the textual differences for source files when they are selected.

Change Device	
The following changes are necessary to perform the refactor	ing.
Changes to be performed	ሁ የ
 ✓ ∰ Change Device for FX.Sim ✓ ∰ Change Device for FX.Sim ✓ ∰ RV.Sim Debug ✓ ∰ Build Settings > Ø ∰ Debug ✓ ∰ Project Files ✓ ∰ generate/absct.c Ø ∰ generate/absct.c 	
C Compare Viewer	M & 9
Current	New New
41void (*const Fixed_Vectors[])(void) = { 42//;0xffffff80 43 Dummý, 44//;0xfffff84 Reserved	40//;0xfffff00 41#ifdef_BIG 42 (fp)&xFFFFFF8, // big 43#clse 44 (fp)&xFFFFFFF, // little
45 Dummy, 46//;0xffff88 Reserved 47 Dummy, 48//;0xfffff8C Reserved 49 Dummy, 59//;0xfffff90 Reserved <	45 mendif 46//;0xfffff84 Reserved 47 Dummy, 48//;0xfffff88 OF51 49 (fp)0xFFFFFFF,

Toolchain management All

Some look and feel improvements have been made to the newly detected toolchains dialog. In particular there is now a Select all and Deselect all button.



Type C ARM Embedded	Installation Path
GCC ARM Embedded - 4.9.3.20150529	C:\Program Files (x86)\GNU Tools ARM Embedded\4.9 2015q3\
GCC ARM Embedded - 6.3.1.20170620	C:\Program Files (x86)\GNU Tools ARM Embedded\6 2017-q2-up
T GNUARM-NONE-EABI Toolchain	
KPIT GNUARM-NONE-EABI Toolchain - v16.01	C:\Program Files (x86)\KPIT\GNUARM-NONEv16.01-EABI\arm-n
iesas CCRL	
Renesas CCRL - v1.04.00	C:\Program Files (x86)\Renesas\RL78\1_4_0\
Renesas CCRL - v1.05.00	C:\Program Files (x86)\Renesas\RL78\1_5_0\
nesas CCRX	
Renesas CCRX - v2.06.00	C:\Program Files (x86)\Renesas\RX\2_6_0\
Renesas CCRX - v2.07.00	C:\Program Files (x86)\Renesas\RX\2_7_0\
Renesas CCRX - v1.02.01	$eq:c:Program Files (x86)\Renesas\Hew\Tools\Renesas\RX\1_2_1\$
aro	
Linaro - 4.8.3.20140401	C:\Program Files (x86)\Linaro\gcc-linaro-arm-linux-gnueabihf-4.
	>
	F GNUARM-NONE-EABI Toolchain KPIT GNUARM-NONE-EABI Toolchain - v16.01 esas CCRL Renesas CCRL - v1.04.00 Renesas CCRL - v1.05.00 esas CCRX Renesas CCRX - v2.06.00 Renesas CCRX - v2.07.00 Renesas CCRX - v1.02.01 ro

In addition, the Renesas Toolchain Management dialog has also been updated. The "Installation Path" can now be copied to the clipboard.

pe filter text	Renesas Toolchain Management	<p th="" ⇒<="" ≠=""></p>
Emulator 🔨	Scan for installed toolchains on start	
Launch Settings	Disable warning if no toolchains are	
Logging		
Renesas Toolcha	Toolchain Type	Installation Path
Smart Browser	✓ ☑ GCC ARM Embedded	
> Smart Configura	6.3.1.20170620	C:\Program Files (x86)\GNU Tools ARM Embedded\6 2017-q2-update\
Smart Demo	4.9.3.20150529	C:\Program Files (x86)\GNU Tools ARM Embedded\4.9 2015q3\
> Smart Manual	V KPIT GNUARM-NONE-EABI Too	lchain
Synergy Configu	✓ v16.01	C:\Program Files (x86)\KPIT\GNUARM-NONEv16.01-EABI\arm-none-eabi\arm-none-eabi\
Synergy License	✓ ✓ Renesas CCRL	
TraceX	✓ v1.05.00	C:\Program Files (x86)\Renesas\RL78\1_5_0\
Task Tags	V1.04.00	C:\Program Files (x86)\Renesas\RL78\1_4_0\
Template Default Va	V Renesas CCRX	
Help	v2.07.00	C:\Program Files (x86)\Renesas\RX\2_7_0\
Install/Update	v2.06.00	C:\Program Files (x86)\Renesas\RX\2_6_0\
Java	V1.02.01	C:\Program Files (x86)\Renesas\Hew\Tools\Renesas\RX\1_2_1\
Library Hover	V V Linaro	
LinkerScript	4.8.3.20140401	C:\Program Files (x86)\Linaro\gcc-linaro-arm-linux-gnueabihf-4.8-2014.04\
MCU	KPIT GNURL78-ELF Toolchain	
Oomph	V GCC for Renesas RX	
Remote Development	4.8.4.201701	C:\Program Files (x86)\GCC for Renesas RX 4.8.4.201701-GNURX-ELF\rx-elf\rx-elf\
Remote Systems	V KPIT GNURX-ELF Toolchain	
Renesas QE	V15.01	C:\Program Files (x86)\KPIT\GNURXv15.01-ELF\nx-elf\nx-elf\
Run/Debug	V GCC for Renesas RL78	
Scripting	4.9.2.201701	C:\Program Files (x86)\GCC for Renesas RL78 4.9.2.201701-GNURL78-ELF\rl78-elf\rl78-elf\
Target Explorer		
Team		
Terminal		
Tracing		Scan Add Remove
,		

Smart Manual RX, RL

A new feature has been added to the smart manual view so that it will display the register help automatically when hovering over a register definition.

By default, this option is not switched on. It is switched on via the toolbar button on the Smart Manual view.



	rch Keyword Se		ice: RX110	
	: 0008 0010h Bit:			
Bit	Symbol	Bit Name	Description	R/W

When switched on if you hover over a register definition in the editor the view automatically switches to show the same information.

🐔 🏘 🔳 🏘 De	bug v	RX_Sim Debug	~ Q	10 - 10	🕲 🖲 + 🐔 + 🗟	-& New Connection	✓ 14 14 E ₁ × □ ¥
· * @ @ @ ₽ ?)	2101910	10 10 · 63 · 63 · 69	• * • %		🧃 🞯 🗐 🕤 🖗 •	81 · · · · · · · ·	Quick Access
Project 21 RX.Sim (Dobug) S (RX.Sim (Dobug)	€ *RX,Sim.c 22 40 17 18 19 20 21 22 23 24 25 26 27	<pre>idefine.h</pre>	T.P5TPA28-1;				(@ Build 3) 영업Docu = (@ @ 또 월 수 수) G RC5m
 if stark.c is stark.h is stark.h is stark.h is stark.h is ypedefine.h is ypedefine.h is yvecthl.c is wetthlc is RX.Sim.c is Debug RX.Sim DebugJas. 	28 30 30 31 32 33 34 35 36 37 36	SYSTEM.HSTPCRA.BI } #lifdefcplusplus void abort(void) { } #endif <	for details o Manual (R01	Symbol MSTPA28	Module Stop (SYSTEM. Bit Name Data Transfer Controller Module Stop ase refer to section 11.2.2 topen by pushing the open	Descriptio Target module: DTC 6: This module clock is en 1: This module clock is dis Module Stop Control Regis	abled R/W abled R/W ter A (MSTPCRA) in the User's
	Register Search SVSTEM.MSTP Data Transfer 0	Tasks Console Proper Keyword Search CRA.BIT MSTPA28 v Go Controller Module Stop (SYSTEM 08 0010h Bit: b28	Device: RX110		an a	t conge supported	Press 12: for forunge
	Bit	Symbol Bit Name Data Transfer		De dule: DTC idule clock is ena	scription	R/W R/W	

RL78 Simulator Trace break reason	RL78	When using the RL78 Simulator and the trace capture is stopped the reason for the break is not show in the trace window. This has now been updated to show the break reason in the status column.
Synergy Editor	Synergy	The Synergy editor has been improved to also allow you to build software stacks from a driver to framework level.
		Originally the specification was designed so that you would choose the upper level interface and then the tooling builds the software stack down to the driver level.
		In some cases, it may make sense to build software frameworks from the driver layer up to framework layer. This is available from the "Extend Stack >" functionality when a module is selected.

B	Elinky Tronad Stacks	Cenetate	0 Project Cas					
B	Elinky Thread Stacks			reser	Type	See		
and Sectors and Se	Parale a manetary	🐑 New Stack > / 📥 Extend Stack >	all farm	1016	Pile foide:	Connectivity	18	2C Mater Drive on citic implementing DTC Drive for Transmission
→ → HAL/Common → → → → → → → → → → → → → → → → → → →	 g, transfer0 Transfer Driver on r_dtc Settuare Schwatern 1 		Foar X-W	neverk inv	>	input Storage		DC Master Driver on rule: (implementing DTC Driver for Reception) DC Master Driver on rule: Ur (implementing DTC Driver for Transmissio
	0		4 Sea	nha				El Staton Division (r.g.), El pristanting EEC Davie (r. Korpolo) El Solven (r.g. (pristanting EEC Davie (r. Mannania) El Solven (r.g. (pristanting EEC Davie (r. Mannania)) El Solven (r.g. (pristanting EEC Davie (r. Mannania))

Synergy Project Synergy Exporter

An improvement to the Synergy Project Exporter has been made to ensure you do not accidently include build directories and temporary data by default when exporting Synergy projects.

	Synergy Export Wizard	
	Archive file Please enter a destination archive file.	
	 Est6 [Debug] module_descriptions module_settings module_bebug module_descript 	Image: Construction of the system Image: Construction of the system
	Filter Types Select All Deselect All To archive file:	▼ Browse
	Options Save in zip format Save in tar format Compress the contents of the file	Create directory structure for files Create only selected directories
	2	Finish Cancel
Customer All include file paths	A new feature has been added by additional of multiple include paths	
	This dialog has been modified to in option. Then when the user brows using Eclipse placeholders it scans and adds these to the build setting	es to a directory or enters a path s the subsequent sub-directories
	e ² Add directory path Directory:	×
	OK Cancel	Norkspace File system



7. What is new in 7.0.0?

Device	Description
Renesas Synergy	When using e2 studio to do a headless build with Synergy it can be difficult to setup a brand-new workspace and configure the licence file location.
	This has been improved to use a command line parameter on the e2 studio command line.
	-vmargs -Dcom.renesas.synergyLicenseFile=" <absolute file="" licence="" path="" to="">"</absolute>
	studio. The reason for breakpoints not being set is more clearly shown in the source window.
	23 24 fffe0572 •void main(void) 25 f
	<pre>so26 fffe0574 volatile int a = 0; 27 o28 fffe0577 a++; a29 fffe057d a++; 30 31</pre>
	.a32 fffe0583 a++;
	e 34 fffe0589 ● if (a>10) a 35 fffe058f 36 } A Could not insert breakpoint.\nRemote failure reply: FFFFFFF add hardware breakpoint Press 'F2' for focus

If breakpoints fail on the launch of the debugger then the launch is aborted. An error is displayed and you can now see the exact reason for failure. If you then remove the breakpoint causing the problem and re-launch it should work.





e ² studio 7.3	6.0	Release Note
Synergy Editor	Renesas Synergy	The threads page user interface has been updated to navigate your threads and Synergy software stacks more effectively.
		Previously thread selection was a flat list which only allowed each thread to be selecting. In this case all software stacks were shown in the graphical area.
		Now the threads are shown as a tree meaning you can still select the entire content of a thread or choose an individual software stack. When choosing an individual software stack only that software stack is shown in the graphical view.
		In the example below the user has selected the thread and 3 software stacks are shown.
		là resetprg.c là RX111.c 🔮 *[Synergy] Synergy Configuration ™

hreads Configuration			Generate Project Conte
hreads 🔹 New Thread 🕯 Remove 😑	Thread 2 Stacks		New Stack > D Remov
 ✓ ALL/Common <i>G</i>_elc ELC Driver on r_elc <i>G</i>_egc CGC Driver on r_cgc <i>G</i>_fmi FMI Driver on r_fmi 	⊕ g_spi0 SPI Driver on r_rspi	g_ctsu0 CTSU Driver on r_ctsu	g_flash0 Flash Driver on r_flash_hp
g_ioport I/O Port Driver on r_ioport		() •	0
 Blinky Thread g_i2c0 I2C Master Driver on r_sci_i2c Thread 2 	⊕ g_transfer2 Transfer Driver on r_dtc Event SPI0 TXI ■ g_transfer3 Transfer Driver on r_dtc Event SPI0 RXI	 g_transfer6 Transfer Driver on r_dtc Event CTSU END 	
 g_spi0 SPI Driver on r_rspi g_ctsu0 CTSU Driver on r_ctsu g_flash0 Flash Driver on r_flash_hp 		(j) 	
 Thread 3 g_uart0 UART Driver on r_sci_uart 			

In the example below the user has selected the exact software stack and in this case only that one is shown.



Debugger All In older versions of e2 studio when debugging multiple debug connections, you needed to set the port numbers for GDB and ADM manually for the second debug connection.

This was not user friendly, so a new setting was added to automatically select available ports.

This can be seen for all devices on the debug configuration page.



) 🗎 🗶 🖻 🌩 🗶	Name: Synergy Debug		
type filter text C/C++ Application C/C++ Remote Application EASE Script GDB Hardware Debugging GDB Simulator Debugging GDB Simulator Debugging Launch Group Launch Group Launch Group Cemote Application Remote Application Remote Java Application Remote Java Application Remote Remote Java Application Remote Java Application Remote Java Application Remote Remote Java Application Remote Java Applicat	 Main S Debugger ► Startup Common ► Source Debug hardware: J-Link ARM ➤ Target Device: R7FS7G27H GDB Settings Connection Settings GDB Connection Settings Autostart local GDB server Host name or IP address: localhost Connect to remote GDB server GDB port number: 61234 GDB Command: arm-none-eabi-gdb Additional GDB Server Arguments 	Browse	Variables
C >	Reye	rt	۲ Apply

The "Autostart local GDB server" is the option to use for automatic port configuration.

If you need to attach to an existing already running GDB server use the "Connect to remote GDB server" and enter the first port number which was output to the console when the GDB server connects.

Trace All

The Trace plugin and debugger have been improved to now offer Trace capture pause and re-start.

When the debugger is running you can now press the pause button on the Trace view. When this button is pressed the trace is shown within the trace view for the captured data up to the point trace was paused.

PTR Label Addr Sourc Desti Data Size R/W BUS Type BCN Branc Chan Suspendi Running Suspendi Suspendi Suspendi Suspendi Suspendi Suspendi	Con	🔊 Tas	iks 😨 Pro	O E	xec 🧆	Sma 🕻	Deb	🖄 Live	🗳 Rer	🎊 Re	eal ºo	Trace 🕅	🕸 Meas	🖲 M	em 🤇	Perf	O Visu	Ren.	. ON	/lem	-
PTR Label Addr Sourc Desti Data Size R/W BUS Type BCN Branc Chari. inne!													120	0	⇒ Q 8	1 🖩 📽	⇒▲山	企一副A	3 %	0 2	0 1
Runna : Dialore	PTR	Label	Addr.	. Sourc	Desti	Data	Size	e R/	W BL	IS Ty	rpe B	CN E	Branc								
	Runnir	ng																		@	# 2
(Cons., @Tasks 🖞 Probl., @ Exec., @ Smar., ॡ Debu., ﷺ live., 📮 Rene., १८:Real-,, 👒 Trace 🛎 ﷺ Meas., 🔒 Mern., ⊙ Perfo., ⊙ Visua № Rene., 🛙 Mern.,	Cons	🛛 Tasl	ks 🕄 Prol	ol • Ex	ec 👒 S	5mar 🛙	B Debu	🖄 Live	🗖 Rer	ne 🎨 R	eal ee	Trace 8	[∦] Meas.	🔋 M	em (Perfo.	. O Visua	🤋 Ren	e 0	Mem	-
111 🗩 미 🏚 🔍 31 🖬 🖉 (국 소 쇼 전) 🖩 🗸 18 🔶 (전 📦					ec 🍕	āmar G	8 Debu	. 🖄 Live	🗖 Rer	ne 🥸 R	eal ee	Trace 🕫	[∦] × Meas.								-
割 🗩 🗉 🏚 🔍 🖉 🗮 🕊 🐺 本 会 符 🔳 💟 🕸 🔍 🔘 👟	sting fr	rom reco	ord 1 of 6	5534										# »	00 Þ (
sting from record 1 of 65534 TR Label Addr., Sourc., Desti., Data Size R/W BUS., Type BCN Branc., Chan., Time.,	sting fr TR	rom reco	ord 1 of 6 Addr	5534 Sourc	Desti	Data	Size		BUS	Туре	BCN	Branc	Chan	III 🍉	0 3 (
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sting from record 1 of 65534 TR Label Addr., Sourc., Desti., Data Size R/W BUS., Type BCN Branc., Chan., Time., 55532 3FC 0000., LONG W CPU MEM.,, 7098.,	sting fr TR 65533 65532	rom recc Label	ord 1 of 6 Addr FFFF 3FC	5534 Sourc	Desti	Data 	Size	R/W	BUS CPU	Type MEM	BCN	Branc	Chan - -	≣ ≫ Time 7098 7098	m ∌(
sting from record 1 of 65534 Image: Ima	isting fr 'TR 65533 65532 65531	rom reco Label	ord 1 of 6 Addr FFFF 3FC FFFF	5534 Sourc	Desti	Data 0000	Size LONG	R/W - W	BUS CPU 	Type MEM	BCN	Branc	Chan - -	≣ ≫ Time 7098 7098 7098	00 3> (
sting from record 1 of 65534 TR Label Addr Sourc Destia Data Size R/W BUS Type BCN Branc Chan Time 65533 FFF SFC	isting fr PTR 65533 65532 65531 65530	rom reco Label	ord 1 of 6 Addr FFFF 3FC FFFF 3FC	5534 Sourc	Desti	Data 0000	Size LONG	R/W - W	BUS CPU CPU	Type MEM MEM	BCN	Branc	Chan - - -	Time 7098 7098 7098 7098) 42 00 						

Pressing the resume button then re-starts trace capture.



		□ Cons □ Tasks % Probl. ○ Exec ④ Simar ℚ Live ℚ Rene % Frace # @ Mem ○ Pefo ○ Usina ₱ Rene 0 Mem ○ Pefo ○ Pefo.
Smart Manual	RL78	In previous versions of e2 studio occasionally the Smart Manual link to hardware manual was displayed in the wrong location. The expected behaviour is to jump to the SFR register definition location in the manual.
		In some cases, for the RL78 device family the location was incorrect. Occasional behaviour in old versions of e2 studio:
		Corrected behaviour in latest version of e2 studio: RPECTL = 0; RPERDIS = 0; BCDADJ = 0; User's manual r01uh0146ej0340-r178g13; Version 1.00; June 20, 2018 Figure 27-1. Format of BCD Correction Result Register (BCDADJ) Address FOOPEN After result undefined R Symbol 7 0 5 4 3 2 1 0 BCDADJ 7 0 5 4 3 2 1 0
Synergy Application Project Generator for using SSP Library	Synergy	A new project type has been added for Synergy to assist you in generating an application project setup for using an existing Synergy Software Platform (SSP) library. It is available here: It is available here: Image: Contract of the synergy C/C++ Project Image: Contract of the synergy C++ Project of the synergy Library Project Image: Contract of the synergy C++ Display Project Image: Contract of the synergy C++ Display Project Image: Contract of the synergy C++ Display Project Image: Contract of the synergy C++ Project Using Synergy Library Project Image: Contract of the synergy Library project Image: Contract of th



The library must exist in the workspace you are using. These libraries will then appear within the wizard for selection.

When selected the include paths that are required for setup are automatically displayed:

2		—		×
application project to use a Synergy librar	y project			- 0
Creates a C application project which uses an exist	ing Synergy lib	rary proje	ect 📘	1
Synergy library				
Select Synergy library project: Synergy_Lib				~
Include paths for library access				
	Configura	tion: D	ebug	\sim
S{workspace_loc:/Synergy_Lib/src/synergy	_gen}			^
\${workspace_loc:/Synergy_Lib/src}				
\${workspace_loc:/Synergy_Lib/synergy/ssp		/Include]	}	
S{workspace_loc:/Synergy_Lib/synergy/ssp				
\${workspace_loc:/Synergy_Lib/synergy/ssp \${workspace_loc:/Synergy_Lib/synergy/ssp				
\${workspace_loc:/Synergy_Lib/synergy/ssp \$	/inc/ariver/inst	ances}		>
Linker script				
		_		
Select Linker script to use: script/s7g2.ld		~		
? < Back Next >			Can	
	Fini			

When Finish is clicked then the project is created with the build setting all ready to use the Synergy library.

RZ/A Linux Target Debug	RZ	Linux target OS debugging is now supported. This is achievable with Ethernet and Serial connections to the target board.
0		This project type is available from the RZ Linux C/C++ project type. See below:


elect a wizard			\rightarrow
<u>W</u> izards:			
type filter text			
✓ ➢ General ☆ Project			
✓ → C/C++			
C/C++ Pro	oject		
	roject with Existing Code		
🔂 RZ Linux C 🎯 Synergy C			
> 🗁 Java	ic++ Ploject		
> 📂 Tracing			
<u>Show All Wizards.</u>			
?	< <u>B</u> ack <u>N</u> ext >	<u>F</u> inish	Cancel
e ² RZ Linux Project		-	- D X
	nd project selection	-	□ ×
Z Linux toolchain a	and project selection polchain and a template project	-	□ ×
Z Linux toolchain a Select target device, to	oolchain and a template project	-	
IZ Linux toolchain a Select target device, to RZ Linux Target Device	oolchain and a template project	-	
RZ Linux toolchain a Select target device, to RZ Linux Target Device Toolchains	oolchain and a template project	-	
IZ Linux toolchain a Select target device, to RZ Linux Target Device Toolchains	RZ/A1H (R7S721000)	-	
IZ Linux toolchain a Select target device, to RZ Linux Target Device Toolchains	RZ/A1H (R7S721000)	-	
Z Linux toolchain a Select target device, to RZ Linux Target Device Toolchains Toolchain Version Project templates RZ/A1H Hello V	RZ/A1H (R7S721000) Linaro 4.8.3.20140401 Vorld C+ + Project		
IZ Linux toolchain a Select target device, to RZ Linux Target Device Toolchains Toolchain Version Project templates	RZ/A1H (R7S721000) Linaro 4.8.3.20140401 Vorld C+ + Project		
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Select target device, to RZ Linux Target Device Toolchains Toolchain Version Project templates RZ/A1H Hello V	RZ/A1H (R7S721000) Linaro 4.8.3.20140401 Vorld C+ + Project		

Ensure Synergy pin structures	Synergy	Pin configurations setup in the Synergy pin view are now made available in the properties window.
are available as enum in properties window		The generated data file name as listed in the pins view is made available In the Power Profile pin configuration properties page. See below:



		∰ *[ide20592] Synergy Configuration 🛛
		Pins Configuration
		Select pin configuration
		S7G2-DK-sleep.pincfg Generate data: g_bsp_pin_cfg_sleep2 S7G2-DK-sleep.pincfg S7G2-DK-pincfg S7G2-DK-wideput configuration> Pin Configuration
		type filter text 🖉 🕒 😑
		 > Ports > Peripherals > Other Pins
		Properties 🛛 😰 Problems 👒 Smart Browser
		g_sf_power_profiles_v2_low_power_0 Power Profiles V2 Low Power Profile Settings Property Value
		Module g.f power_profiles_v2_low_power_0 Power Profiles V Name g_sf_power_profiles_v2_low_power_0
		Callback (Low Power Exit Event N/A when using Deep Soft NULL Low power entry pin configuration table <none></none>
		Low power exit pin configuration table g_bsp_pin_cfg <none></none>
		g_bsp_pin_cfg_sleep2
RZ/G Segger J-Link Debugging	RZ	The RZ debugger has been updated to also allow connection to the RZ/G device family via J-link. The RZ/G devices are available for selection in the "Renesas GDB
		Hardware Debugging" debug configuration category.
		Create, manage, and run configurations
		Mang Program net specified
		hper filter trot C/C++ Application C/C++ Application
		EXE Script COB Handware Delwogring GOB Settings GOB Settings GOB Settings GOB Settings RZ X X X
		CDD Simulator Debugging (9450) Use Applet Bio Autostant local GOB server Host name or IP address: Isocalhost RZ/G PR2/G
		Exand-Group (Deprecited) GDB Command: GDB Command:
		% Remote Debugger Bern-none eabling db Brownen Writebles v E Reness G63 Hundware Debugging
		© denotes Dilug E denotes Dilug E denotes Dilug E 25, Syngy Dilug E 24, Hadvandblug E 25, Statundblug
		Constantiation Constantiation Constantiation Constantiation Constantiation Constantiation Constantiation Constantiation Constantiation Constantiation
		Decision Synthesis Simulated Belogging (K, RLT) CCC, Sim Delay CCC, Sim Delay Target Constraints of Remarksh
E2 Emulator	DV	E2 amulator support has been added for the DZ DI 79 and DU950
Debugging	RX, RL78,	E2 emulator support has been added for the RZ, RL78 and RH850 device families. Debugging function is the same as the E1
Debugging	RH850	Emulator.
CCRL	RL78	The CCRL V1.07 compiler for RL78 is now supported.
Compiler		
Eclipse		This version of e ² studio is based on Eclipse Oxygen.3 and CDT 9.4.
Platform &		This release note does not describe the Eclipse framework and CDT
CDT		plugin issues and fixes. You can find the detailed information on the
		sites below:
		For information on the Neon release see here:
		https://projects.eclipse.org/releases/oxygen
		CDT:
		Please see New and Noteworthy for CDT here:



		https://wiki.eclipse.org/CDT/User/NewIn93 https://wiki.eclipse.org/CDT/User/NewIn94		
		The Eclipse bug tracker is here: https://bugs.eclipse.org/bugs/		
Memory Usage View	Synergy and RZ	When supported by updated device support files in e2 studio or the Synergy Software Platform (SSP) the Memory Usage View now supports the graphical view to show usage in the ROM and RAM memory areas.		
Simulator RL78 Advanced Debugging	RL78	The RL78 Simulator support has been enhanced to support Profile, Trace and Coverage views.		
GNU ARM Eclipse Plugins	Synergy and RZ	The GNU ARM Eclipse plugins have been updated to a newer revision. The version included is Version: 2.6.1.201806250952		
		This plug-in is part of the GNU MCU Eclipse project. For more details, visit < <u>http://gnu-mcu-eclipse.github.io</u> >		
Synergy Software Platform Network	Synergy	A new feature has been added which makes it much easier to install SSP in a shared network location and point your e2 studio installation at that rather than using a local install folder for the SSP pack files.		
Install		This can be achieved by opening the file <e2studio>/eclipse/e2studio.ini in a text editor and adding the following line at the end of the file:</e2studio>		
		-Dcom.renesas.synergyPacksFolder=\\myServer\myPath\to\packs		
		On start-up e2 studio will read the installed packs from this location rather than the packs folder underneath the application folder.		
Synergy Editor	Synergy	The Synergy editor has a new feature to restore the BSP properties back to default values. This can be seen in the image below:		
		(b) [Synergy] Synergy Configuration 12		
		Board Support Package Configuration Generate Project Content		
		Device Selection		
		SSP version: 1.4.0		
		Board: S7G2 DK Image: S7G2 7H2A01CBD Image: S7G27H2A01CBD <		
		Summary BSP Clocks Pins Threads Messaging Components		
Synergy Editor	Synergy	In previous versions of e2 studio the files which hold the configuration data values for the Synergy modules were copied to the project directory in the folder .moduledescriptions.		
		This allowed you to still use the project when the required SSP pack was not installed. However, it also increased the project directory size.		
		From this version of e2 studio the .moduledescriptions are now stored once at an application level. If you import and existing project into the latest e2 studio it will continue to use the .moduledescriptions in your		



project. If for some reason this is not available or you create a new project the editor will use the application stored .moduledescriptions. RX, When using the trace view a new feature has been added to break the Trace execution when the trace buffer is full. This feature is available for: RL78, RH850 RX (E1, E20, E2, E2 LITE, EZ, Simulator) • RL78 (IECUBE, Simulator) RH850 (E1) The feature is available from the trace view within the Trace Acquisition dialog: e² Trace Acquisition Trace Mode: Fill until full then break \sim Fill until stop Trace Output: Branch+Data access \sim Trace Type: 64K Trace Capacity (frames) : \sim Timestamp Frequency Divider: Enable Timestamp Display: \checkmark CPU Bus Master Of Data Access: Start address for Access(without data) End address for Access(without data) ОК Cancel RL78, The find trace feature has been enhanced to fully utilise the features in Trace RH850 the RL78 and RH850 debugger.

This functionality is available from the trace view:

Fetch Address	Cycle
FetchData Read Address	0
Read Data Write Address	Range
Write Data	0
 TimeStamp (Count) Jump Address 	Exclude
	Find Next Find Previous Close



e² studio 7.3.0 **Release Note** Segger J-RX The Segger J-Link debug configuration for RX device support has been Link Support improved to allow automatic connection or specific emulator connection. e² Debug Configuration Create, manage, and run configurati 🗋 🗑 🗶 🖻 🔅 -Name: CCRX HardwareDebug type filter text 📔 Main 🗱 Debugger 🌔 Startup 🤤 Source 🔲 Common C C/C++ Application C C/C++ Remote Application E 625 Script C GDB Hardware Debugging C GDB OpenOCD Debugging C GDB Simulator Debugging | Los Applet Debug hardware: Segger JLink (RX) V Target Device: R5F51115 ... GDB Settings Connection Settings Debug Tool Settings GDB Settings Lonnection settings Debug Tool Setti y J-Link Link Serial Good Clock Source Extal Frequency(MHz) Permit Clock Source Change On Writing Intern y Consection with Turced Board USB Java Applet Java Appletation & Launch Group (Deprecated, Generate Application Remote Debugger Remote Java Application CORX Hardware Debug CORX Hardware Debug Correspondence Construction Con Java Applet (Auto) EXTAL 22.0 Select the emulator to use for this debug config Yes v Connection with Target Board Auto Select Connection Type JTag Clock Frequency[MHz] Fine Baud Rate[Mbps] Fine 16.5 Туре Serial Number/ID 2.00 Fine Baud Rate[Mbp CPU Operating Mode Register Setting Mode pin Communication Mode Mode Single Chip Single-chip CREASE Simulator Debuggi CREASE CCRL Debug CCRL Debug Debug Mode OK Cancel Target Communication Fra Execute The User Program After Ending The Deb ✓ Flash < > Revert Apply Filter matched 21 of 23 items ? Debug Close

Synergy Synergy Editor – Threads Tab To improve usability the add new Synergy module functionality on the threads page has been improved. There has been a new "Search..." menu added to the "New Stack" menu hierarchy. See below:

🛱 [Synergy] Synergy Configuration 🛙 🗖							E Outlin
Threads Conf	iguration				Generate	Project Content	An outline
Threads	New Thread 🔊 Remove 😑	HAL/Common Stacks			New Stack :		
	rmon ELC Driver on r_elc FMI Driver on r_fmi	g_elc ELC Driver on r_elc	∉ g_fmi FMI Driver on r_fmi	g_ioport I/O Port Driver on r_ioport	g_cgc CGC Driver of r_cgc	Driver Framework X-Ware	> >
	nt I/O Port Driver on r_ioport CGC Driver on r_cgc ead	1	1	0	0	Search	

Clicking this menu item then opens a dialog allowing you to search and filter on the available SSP modules. In the example below, we have entered SPI and this is the result:

e ² New Stack	—		×
SPI			R
 ✓ Driver ✓ Connectivity ◆ SPI Driver on r_rspi ◆ SPI Driver on r_sci_spi 			
	New	Cancel	

In addition to this functionality a search of software stacks already created has also been implemented. This can be accessed by using the CTRL+F shortcut or [Edit->Find] menu when the Threads tab is focused. A dialog is shown with your configured stacks.

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Then when you type a search condition the matching parts of the software stack are shown. Selecting the correct module and pressing the "Select" button then automatically highlights the module in the Threads Page.

		e ² Find —		×	
		SPI ✓			
		Select	Cancel		
Synergy Debugger	Synergy	When the Synergy debugger reaches ar e2 studio the call stack within the debug as much information as possible. In the latest version the call stack is mor see a more complete call stack in the int	view w e comp	as not popula	ited with
Debug Console	All	In previous versions of e2 studio some u debug console functionality. This provide this as a virtual serial input/output chann semi hosting support for ARM. Previously the view was embedded with studio. Now the view has been moved u Views->Debug] menu item:	es supp nel for R in the c	ort for custon XX. It is also u onsole view c	ners to use sed for of e2
		e ² workspace2806 - Synergy/configuration.xml - e ² studio File Edit Source Refactor Navigate Search Project Renesas Views I	Run Window	Help	
		Image: Synergy Image: Synergy Image: Synergy Debug.launch Image: Synergy Debug.launch	ator	 Memory Usage Renesas Coverage Renesas Coverage Eventpoints O Registers MMU Performance Analy Performance Analy Real-time Chart Trace Visual Expression Fault Status Live Trace Console 	rsis e
		All other functionality is the same but mo to discover the view and its functionality.		omers should	l be able
Build Settings Report	All	The Build Settings Report has been imp order the options in the same way as the enable checking the options against the	e user in	nterface. This	should



		Project Explorer 🔀	
		> 🞏 CCRL > 🚝 CCRX	
		Syne New Image: Signed state Image: Signed state Image: Signest state I	>
		Team Compare With Restore from Local Histo	
		MISRA-C Save build settings repo	rt
Synergy Editor	Synergy	of the Synergy editor. This is to	nponent has been added to the BSP tab o improve accessibility of the import y when wanting to add a custom board
		الله *[Synergy] Synergy Configuration کے Board Support Package Configuration	
		Device Selection SSP version: 1.4.0 Board: S7G2 DK Device: R7FS7G27H2A01CBD	Board Details



Partner OS Improvement	All	Numerous improvements have been made to the Partner OS plugin:
		 Added ability to set thresholds and this data to then be saved and restored for future debug sessions. When stacks reach threshold or overflow, popup messages will be displayed to notify user about the stacks reaching their thresholds. Added context menu and toolbars for setting thresholds Added sort feature to the stack graph column within the stack tab.
Smart Configurator	RX	 Smart Configurator has been updated to support RX110, RX111 and RX113. In previous versions of e² studio, BSP version mismatch occurred when user downloads the newly updated FIT modules from website. From this version, Smart Configurator will be able to update BSP to the latest version. So, user can use the newly updated FIT modules with the correct BSP dependencies at ease. Importing and exporting board information has been supported. Clock and pins can be configured for specific board by importing board description file. Board description files for Renesas Starter Kit can be downloaded using Smart Configurator. Clock and pin settings modified using Smart file
Partner OS Improvement	All	 file. Numerous improvements have been made to the Partner OS plugin: Added ability to set thresholds and this data to then be saved and restored for future debug sessions. When stacks reach threshold or overflow, popup messages will be displayed to notify user about the stacks reaching their thresholds. Added context menu and toolbars for setting thresholds Added sort feature to the stack graph column within the stack tab.



8. Useful workarounds and information for 7.3.0

Please visit the Renesas FAQ for **e**² studio for the latest up to date information:

Online FAQ link.

ID	Component	Workaround or information			
	Application	When using the check for updates feature within e2 studio and updating from 7.0.x to 7.1.x the initial restart after the update fails. An error message is displayed. Subsequent launches of e2 studio work without issue.			
		This is caused by the update to Java.			
	SH support	The Renesas SH device family is no longer supported in e ² studio.			
		If you need to use the SH device support, please use e^2 studio 5.4 or earlier.			
	Importing old projects into 6.x	All projects being migrated into the latest e ² studio from e ² studio 5.4 and earlier versions will need to be migrated to the new builder plugins. The new builder plugins have different user interface pages and different option IDs. Upon opening an older workspace, the following dialog would be displayed:			
		el Older Workspace Version X			
		Workspace '/C:/Users/b3800109/e2_studio/workspace54/' was written with an older version of the product and will be updated. Updating the workspace can make it incompatible with older versions of the product. Are you sure you want to continue with this workspace?			
		Do not warn again about workspace versions OK Cancel			

Clicking OK will update the workspace to the newer e² studio.

Importing an existing project to the workspace or opening a workspace with old projects will automatically start the legacy project upgrade procedure.

If for some reason this process does not start it is also possible to launch the "Upgrade Legacy of e2 studio Projects..." from the project context menu.

e ² workspace54 - C/C++ - e ² studio		
File Edit Source Refactor Nav	gate Search Project Renesas Views Run W	/indow Help
🐔 🔅 🔳 🔅 Debug	✓ CCRX_54_Project HardwareDebu	ig 🗡 🌞 🗄 📬
월 ▼ 월 ▼ 10 ♥ ↔ ♥ → ♥		
🎦 Project Explorer 🛛		
> 🚰 CCRX_54_Project [Hardward		
	New	>
	Rename	F2
R	🔤 Import	
	Export	
	🕅 Upgrade Legacy e2 studio Projects	
	Build Project	
	Clean Project	
	Refresh	F5



The automatic system pops up a message bubble in the bottom left of the e² studio application window.



After selecting the menu item or clicking the bubble the following dialog will be shown:

e ²	_	-		×
Upgrade Legacy e2 studio Projects				
8 You must select at least 1 project				
CCRX_54_Project [HardwareDebug]				
?	<u>F</u> inish		Cancel	

To upgrade the project, click the corresponding check box and then click Finish. Note, this will update the project to the latest build plugins and options. Before doing this, you should ensure your project is backed up as this operation is not reversible.

It is possible to upgrade multiple projects in a single operation.

For the GCC toolchains for RX, RL and GNUARM-NONE have been made to the build options which mean we cannot guarantee the same binary output after upgrade. Please consider this before upgrading.

Another consideration for migration is that debug configurations when opened in 6.0 will also need to be migrated. The following message will be displayed.





Please ensure that your projects are backed up or in revision control before migration allowing you to return to older versions if required.

ToolchainBefore e² studio 6.0 the toolchain management facility automatically upgraded orManagementdowngraded the imported project to the latest tools installed on the host
machine.

This no longer happens in the latest e^2 studio. Instead the toolchain remains the same and user operation is the only way to change the toolchain version.

This operation is now available within the build settings on the toolchain tab. An example of CCRX is shown below:

	e ² Properties for CCRX_54_Project		– D ×
	type filter text Resource	Settings	
	Builders C/C++ Build Build Variables Environment	Configuration: HardwareDebug [Active]	▲ Manage Configurations
	Logging Settings Tool Chain Editor > C/C++ General Project References Run/Debug Settings	 Tool Settings Toolchain Device P Build Steps P Build Artifact Current Toolchain Toolchain: Renesas CCRX Version: v2.06.00 Change Toolchain Toolchain: Renesas CCRX Version: v2.06.00 	Binary Parsers 3 Error Parsers
	?		OK Cancel
	•	oolchain version does not exist and bu s displayed and the build will fail.	ild is performed, then a
RZ Toolchain		KPIT GNU ARM-NONE toolchain is st ut now using the gnuarmeclipse plugin	
		ithin e ² studio now supports the GNU / ble from <u>https://launchpad.net/gcc-arm</u>	
	provided in the s this feature for A	of this toolchain is that it does not have name manner as the legacy KPIT ARM RM Launchpad and gain access to the r download is required.	-NONE toolchain. Το ι
		nloaded within the e ² studio installer o	r directly from here:



Once integrated it is possible to integrate the library generator from the toolchain tab of the build settings page.

		e ² Properties for GCC_RZ		– 🗆 X
		type filter text	Settings	← ← ⇒ ▼
		 Resource Builders C/C++ Build Build Variables 	Configuration: HardwareDebug [Active]	✓ Manage Configurations
		Environment Logging Settings Tool Chain Editor > C/C++ General Project References Run/Debug Settings	 Tool Settings Toolchain Current Toolchain Toolchain: KPIT GNUARM-NONE-EABI Toolchain Change Toolchain Toolchain: KPIT GNUARM-NONE-EABI Toolchain Version: v16.01 Additional Tools Create Library generator Create Flash image 	Parsers 🔮 Error Parsers
		?		OK Cancel
			rary generator" option. Once checked the libra d to the available tool settings.	ary generator
	QE compatibility		P V1.0.0 is used, please update it to V1.0.1. s can be used with e^2 studio 6.0.	
		What is QE? https://www.ren	esas.com/qe	
		Details of QE fo https://www.ren	r TCP/IP <u>esas.com/qe-tcpip</u>	
5954	Application		e the error message "org.eclipse.swt.SWTErron n be caused by certain multi-monitor software	
		If this error occu	irs there are 2 workarounds:	
		Uninsta	ingle monitor display. Il the multiple monitor software from your grap and revert to the standard Windows multi-mor	
6981	RL78 Debugging		g IAR C source file with an OCD emulator (E1 0x00002-0x00003) is used.), the Monitor
		So this area mu the linker option	st be excluded from usable address space. Pl	ease add '-HFF' in
		- Open Property	ν.	
		- Select [C/C++	build]-[Settings] at left side.	
		- Select 'IAR RL	78 Xlink linker' at right side, add '-HFF' at the	textbox 'command'.
		Not doing this w interrupts.	ill cause problems with connection and downl	oad when using



e² stud	lio 7.3.0	Release Note
NA	Application	If you are experiencing slow building of projects within e ² studio there are some possibilities to improve.
		The system environment will attempt to find the make.exe tool via the system environment. If you ensure the directory make resides in is at the start of the path variable it will find it more quickly. Especially important if there are network drives in the path.
		In the project properties, C/C++ Build tab, behavior tab you can switch on parallel build. This will take advantage of the multi-cores on your host machine if it has them.
NA	RZ GCC	In 3.0 the KPIT GCC RZ toolchain was supported at version 14.01. This version is no longer supported within e ² studio.
		KPIT modified the name of their ARM toolchain to be ARM-none-eabi to follow standard ARM naming convention like other GCC toolchain vendors.
		The ARM-none toolchain is available at versions 14.01, 14.02 and 16.01 from the www.gcc-renesas.com website. The binaries in the 14.01 version are identical to those used in the 14.01 RZ toolchain.
		Once the toolchain is installed your projects will be imported and ported to ensure there is as little disruption as possible due to this change.
NA	KPIT GCC	The KPIT toolchains are now no longer supported by the www.kpitgnutools.com website. Support is now available from the www.gcc-renesas.com website.
		In addition, there are two new releases for the GNU toolchains for RX and RL78. These are now named Renesas GCC for RX and Renesas GCC for RL78.
		Both integrate into e ² studio and can be selected from the project wizard.
2010 HEW Importer		Symptoms: Project fails to build after importing a legacy project from HEW
	·	Conditions: If a long filename or path is used, and the HEW project importer is used, the project may fail to build.
		Workaround: Move the original HEW project to a shallow directory structure (i.e.) C:\Workspace and import from there. Also, ensure that the HEW project is relocated before importing into e ² studio.
1922	Application	Symptoms: Project fails to build in first instance after archive project import (not from HEW)
		Conditions: If an archived project is imported, it may fail to build the first time, due to a residual .d file.
		Workaround: Clean and Build a second time.
2762	CODAN	When using assembly code within a C source file, CODAN errors can be observed in the editor. Even though the project builds successfully, or even after rebuild index.
		Indexer buffer can be insufficient to process whole project. Please try giving larger values for the following configurations.
		Open preferences dialog through "Window"->" Preferences" menu. In "C/C++" -> "Indexer" tree, you will indexer configuration as shown below:

RENESAS

		e ² Preferences		— 🗆 X
		type filter text	Indexer	← → ⇒ → →
		 > General > C/C++ Appearance > Build Code Analysis > Code Style > Debug > Editor File Types Indexer Language Mappings > New C/C++ Project Wiz > Property Pages Settings > Renesas Task Tags Template Default Values > Help > IAR Embedded Workbench Install/Lindate 	Enable indexer Indexer options Index source files not included in the build Index unused headers Index all header variants Index all variants of specific headers: Index source and header files opened in editor Allow heuristic resolution of includes Skip files larger than: Skip included files larger thar: Skip included files larger thar: Skip included files larger thar: Skip implicit references (call Hierarchy and Search will n Skip implicit references (e.g. overloaded operators) Skip type and macro references (Search for these references (Search	eferences will not work)
2728	GDB	index.	ch red-framed variables, then rebuild pr	
NA	Eventpoints	as this issue with the de If eventpoints do not all to Target" toolbar butto	s correctly you will need to use CC-RX 2 abug information is corrected in this rele ways work just after they are set, you ca n in the Eventpoint view to send the Eve vill always ensure the debugger target h	ease. an use the "Apply entpoints to the
5772	IAR Plugins	eventpoint updates before The IAR Plugin Manage	ore execution starts.	support for RX
0112	in it en lagino	RL78, RH850 and RZ (This tool, simplifies inst	•	ain plugins. You
6184	RL78/CC-RL debugging	please specify the follow	for RL78/G10 which created at CC-RL i wing option: Set enable/disable on-chip debug by lin	
7217	Application	The restore default sett	ings does not restore all the options set sets the defaults to the base settings for	during project
7524	RZ/T1	In a RZ/T1 RAM-based	project, the "Reload" function does not	work.
	Debugging	Reloading or re-downlo content is erased.	ading during debugging resets the devi	ce and the RAM
		To continue the debugg	ging, disconnect and connect the debug	ger again.
	Use spaces as tabs		have settings for use spaces as tabs. The conflicts with the CDT formatter setting	
		To change the use spa	ces as tabs option in e² studio please us	se this page:

Release Note

State Angels Thermity Thermity State Angels Thermity Thermity <t< th=""><th>Take and the interview of the second second</th></t<>	Take and the interview of the second
Data provides Image:	<pre>iii 1 are cattle indef iii iiiiiiiiiiiiiiiiiiiiiiiiiiiiiiii</pre>

	Installer problems	In some situations, the AVG virus checker appears to interfere with the e ² studio installation process. If you experience such a problem, please temporarily disable the AVG tool and try the installation again.
	Antivirus	In some situations, the Norton anti-virus tool can interfere with the building of Renesas Synergy projects. If possible, please disable the antivirus program when building Renesas Synergy projects on systems with Norton Antivirus installed.
	Green Hills RH850	When debugging the RH850 object built with the Green Hills compiler in e2 studio, specify the following option for the compiler option.
	Projects	-gtws
		The GUI setting menu is as follows.
		[GHS C Compiler for V800 Standalone]-[Debugging Option]
		"Generate Target-Walkable Stack" -> On
		If this option is not specified, Step Over and Step Return may not work properly.
17052	Debugging	When debugging using a project with duplicate filenames that are in different source folders problems can be seen with breakpoint setting.
		When a breakpoint is set at a source line in this file it will also stop at the same source line in the other same named file when execution passes through.
18505	RZ debugging	When debugging with RZ/T1 in certain situations you may experience problems stepping:
		If the following conditions are met:
		 Code is located close to address 0x0 There is very little library code included into the project There are unused functions in the program
		The possibility arises that the code cannot be debugged. This due togc- sections linker option which removes the unused functions but not the related debug information.
		There are several solutions to this problem: a. disablegc-sections until those functions are used b. remove the unused functions
	RZ GCC Build	In the latest e2 studio the RZ import functionality has been improved. However, there are still possibilities of older projects causing problems when imported into e ² studio.



		In older versions of the RZ build plugins the FPU option was not being handled correctly. When setting the "Soft" Floating point ABI the command line was still receiving –mfpu=vfpv3 incorrectly. This can now cause problems with older start-up code in older RZ projects.
		After import if you see an error relating to this please add –mfpu=vfpv3 to the "Other Assembler Flags" page of the Assembler tool.
		In addition, when migrating some RZ/A1 projects you may experience import problems unless you build the project in 5.4 first.
	RZ DS-5 Project Import	When a DS-5 project is imported into e ² studio the environment variables for Path and TCInstall are copied from the DS-5 environment.
		This is not correct. The way to correct this problem is to delete both paths and replace them with correct values to your toolchain. If you are unsure how to correct this please create a new project and copy the values from this to the converted project.
	RX & RL78 GCC Project Import	When importing a KPIT RL78/RX Library C/C++ project from e ² studio 5.4 or before the build artifact settings are not correct.
		The output prefix should be set to "lib" but is in fact empty.
	RZ/G debug	In the case of debugging Linux application for RZ/G, the following error messages are shown in GDB server console when pushing [Step in] button or [Step Over] button. These messages can be ignored because the Step debugging should work properly even with these messages.
		Examples of error messages: PassthroughTargetCommunication::sendResponse error 42 46 PassthroughTargetCommunication::sendResponse error 10 15 PassthroughTargetCommunication::sendResponse error 42 46
21863	RX & RL Debugging	In previous releases there were some problems with stepping in some situations when using the CCRX and CCRL toolchains.
	Code	A fix has been made to the debug object converter. To see this improvement please clean and rebuild the project. The debug information will then be updated, and the stepping will be more correct and reliable. When using multiple installations of e ² studio on your machine you may find that
	Generator registration	subsequent installations do not work correctly with the code generator. The effect is that the code generator cannot be created or added to projects. Existing projects can be used by the code generator views appear empty.
		If this is the case, then the code generator must be manually registered. To do this execute the following tool:
		e.g.
		C:\Renesas\e2_studip\eclipse\plugins\com.renesas.cg_2.11.0.v20180601- 1047\CodeGenerator\Tools\register COM.bat
25702	ARM Project Import	When importing an e2 studio KPIT GNUARM-NONE project from 5.4 into the latest version some options can be lost that are specified on single files. (local options not project based options)



25479	CCRX to GCC Convertor	When importing a CCRX 6.3 e2 studio project into the latest e2 studio the project cannot be converted when the source project only has one build configuration.
25312	ARM Semi hosting and GCC 7.x	The default created GCC project in e2 studio for RZ and Synergy will not work with semi-hosting when using a GCC 7.x toolchain. This is due to semi-hosting being revised to v2, , presented in this document: https://developer.arm.com/docs/100863/latest/introduction.
		Launchpad toolchains v7.2 or newer, provide an upgraded semihosting v2 implemented in syscalls.c, which is provided by the newlib libraries. When the function initialise_monitor_handles() tries to identify features, a new mechanism introduced in semihosting v2, it will cause the debugger to provide incorrect answer, prompting semihosting to close stdout, stdin handlers and stalling the processor.
		1. use syscalls replacement code provided in the eclipse plugin, which is guaranteed to work. We can achieve this by copying to project sources "_syscalls.c" and "semihosting.h" from <eclipseinstallfolder>\eclipse\plugins\ilg.gnumcueclipse.templates.core<pluginversion >\templates\common\system. Additionally, in project properties, Compiler settings the language standard must be changed to gnu99, as well as an additional define must be added OS_USE_SEMIHOSTING. Finally removing from linker flags -specs=rdimon.specs will allow the project to compile and semihosting work as intended.</pluginversion </eclipseinstallfolder>
		2. Identify the library used in your project and replace it with an older library. This can be achieved by first building the project with GCC 5.4 a quick search in the. map file for initialise_monitor_handles, will reveal the location of the folder that contains the libraries involved. Then repeat the same steps for GCC 7.2 compiler. Finally replace the entire folder with the folder from the older compiler, reverting the semihosting implementation to V1.
25278	Synergy debugging	When loading Symbols from multiple .elf files compiled using the IAR toolchain, the user will need to add ".text" before place in FLASH_region command inside
		the .icf Script.
		e.g. ".text":
		place in FLASH_region { block LOCK_LOOKUP,
		ro,
		ro section .rodata,
		block QSPI_NON_RETENTIVE_INIT_BLOCK,
		<pre>block RAM_INIT_CODE,</pre>
		<pre>block USB_DEV_DESC_BLK };</pre>
25273	RZ Device Migration	When changing the device from a RZ/A1 and attempting to swap to a RZ/T1 the device migration is not successful.

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		The source code is not migrated successfully and the build fails.
		This is due to the different start-up code structure between these devices.
		In this case please create a new project and copy the required source to the newly created project.
25195	RZ/A2M Smart	When creating a project of RZ / A2M, the following Warning is displayed in the Problems view for the src / renesas / configuration folder.
	Configurator	"Invalid project path: Include path not found"
		[Workaround]
		Delete the specification of this folder with the compile option include path setting.
25018	Synergy RTOS debugging	When debugging a project with many threads (e.g. 150 threads) while having the RTOS Resource View open, e2 studio might hang and become unresponsive.
		A workaround for this is to make the RTOS Resource View small and expand it once the Debug Tree View has finished updating.
		Alternatively, you can disable the debug view OS support within the debug configuration.
24883	R2/A2M	RZ / A2M project generated by e2 studio does not support GCC ARM 7.x. Please use GCC ARM 6.3.



9. Open Issues in 7.3.0

Open issues in the e^2 studio 7.3 product will be kept up to date <u>here</u>:

Please visit to see the latest open issue list.



10. Appendix

10.1 Website and Support

Renesas Electronics Website <u>http://www.renesas.com/</u>

Inquiries

http://www.renesas.com/contact/



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