

e² studio 2023-07 (2023-07.R20230714-1443)

Release Note

R20UT5328EG0100 Rev.1.00 20th July 2023

Introduction

This document outlines the device support, new features added in 2023-07, fixed issues and open issues in e^2 studio 2023-07.

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1. Product Information

1.1 Supported Operating Systems

These operating systems are officially supported by e² studio:

- Windows 10 64-bit
- Windows 11 64-bit

In addition, another official product build is available for Linux. This version supports:

- Ubuntu 20.04 LTS
- Ubuntu 22.04 LTS

No other Linux distributions are officially supported by e² studio.

e² studio now runs on Java 17 & does not support older Java versions.

1.1.1 Windows 64-bit product version

Please note that 2020-04 and later versions are 64-bit product build versions of the tool.

We would like to state that the workspaces and projects from 7.x versions (32-bit) of e^2 studio are compatible with 64bit e^2 studio.

When opening a workspace from 7.x you will be shown a warning, and this is standard Eclipse behavior. This is shown because some metadata in the workspace can change between versions so a workspace will not always work with older versions of the tool.

- Projects are forward & backward compatible,
- Workspaces work when upgrading but it is not guaranteed to 100% work if you return the workspace to 7.8.

The switch to 64-bit has unfortunately meant that some functions have now been deprecated from the tooling due to this move for the base platform. The removed functionality is listed below:

- HEW Project Convertor
- Renesas RTOS views
- Mylyn integration
- Subversion integration

If you need this functionality, then please remain on e^2 studio 7.8.

Linux tools are now only available in the Linux host version of e² studio.

1.1.2 System requirements

For Windows 64-bit version

- System: x64 based processor, 2 GHz or faster, CPU has dual cores or more
 - Windows® 11 (64-bit version)
 - Windows® 10 (64-bit version)
- Memory capacity: We recommend 8 GB or more. At least 4 GB.
- Capacity of hard disk: At least 2 GB of free space.
- Display: Graphics resolution should be at least 1024 x 768, and the mode should display at least 65,536 colors.
- Interface: USB 2.0
- Microsoft Visual C++ 2010 SP1 runtime library *1
- Microsoft Visual C++ 2015-2019 runtime library ^{*1}



*1. This software will be installed at the same time as the e² studio.

For Linux

- System: x64 based processor, 2 GHz or faster, CPU has dual cores or more
 - Ubuntu 20.04 LTS Desktop (64-bit version)
 - Ubuntu 22.04 LTS Desktop (64-bit version)
- Memory capacity: We recommend 2 GB or more.
- Capacity of hard disk: At least 2 GB of free space.

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1.1.3 Linux version

The Linux product version of e² studio for Linux is based on the same content as the Windows release.

Therefore, documents of e² studio will be helpful for common usages. There are some differences, the Linux version only supports some different levels of tooling.

The Linux product supports RX, RL78, RH850, RA, RZ and DA.

Synergy and RE are not supported under Linux host OS.

RX, RH850, RL78 are added in 2023-01 for the first time for Linux host OS. The feature set for these families are reduced under Linux.

- RX: Toolchain support only GCC, debug support E2/E2 Lite Emulator and Segger J-link. No Renesas simulator support.
- RL78: Toolchain support only GCC and LLVM, debug support for E2/E2 Lite Emulator. No Renesas simulator support.
- RH850: No toolchain support apart from Green Hills and IAR. Debug support for E2 Emulator.

The Code Generator is not supported under the Linux host OS.

For information on how to install the Linux product please refer to FAQ in below URL.

English: <u>https://en-support.renesas.com/knowledgeBase/19934358</u> Japanese: <u>https://ja-support.renesas.com/knowledgeBase/19934356</u>

Device Family	Windows Product Support	Linux Product Support
EC-1	Yes	No
RA	Yes	Yes
RE	Yes	No
RH850	Yes	Yes
RL78	Yes	Yes
RX	Yes	Yes
RZ	Yes (No RZ/G Linux Platform Tools)	Yes
Synergy	Yes	No
DA	Yes	Yes



1.2 Supported Toolchains – Windows Hosted

The following toolchains are supported in e² studio.

		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	Yes (CC-RH)	No	No	Yes	Yes
Device	RZ/ARM	No	No (*1)	Yes	Yes	No
-	Synergy/ARM	No	Yes	No	Yes	No
	RA/ARM	No	Yes	No	Yes	No
	RE/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. Supported ARM GCC versions vary from device family to device family. Please see the following table for more information:
- *3: Legacy GNUARM toolchains are available from https://llvm-gcc-renesas.com/. In addition, the latest RX and RL78 Renesas GCC toolchains are available from this website. Also LLVM for RL78 is available from https://llvm-gcc-renesas.com/.
- *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.



Device Family	GCC distribution and version
RZ/A1, A2	9.3.1 (2020 q2)
RZ/A3UL	FSP 1.0.0: AArch64 bare-metal 10.3.2021.07 FSP 1.1.0: AArch64 bare-metal 10.3.2021.07 FSP 1.2.0: AArch64 bare-metal 10.3.2021.07 FSP 1.2.1: AArch64 bare-metal 10.3.2021.07 FSP 2.0.0: AArch64 bare-metal 10.3.2021.07
RZ/G1, G2 (Cortex-A)	Linaro 7.4.1
RZ/G2L (Cortex-M33)	FSP 1.0.0: 9.2.1(2019q4) FSP 1.1.0: 9.2.1(2019q4) FSP 1.2.0: 9.2.1(2019q4)
RZ/N2L	FSP 1.0.0: 9.3.1(2020q2) FSP 1.1.0: 9.3.1(2020q2) FSP 1.2.0: 9.3.1(2020q2)
RZ/T2M	FSP 1.0.0: 9.3.1(2020q2) FSP 1.1.0: 9.3.1(2020q2) FSP 1.2.0: 9.3.1(2020q2)
RZ/T2L	FSP 1.2.0: 9.3.1(2020q2)
RZ/V2L	FSP 1.0.0: 9.2.1(2019q4) FSP 1.1.0: 9.2.1(2019q4)
Synergy	SSP 1.6.x: 7.2.1 SSP 1.7.x: 7.2.1 SSP 2.0, 2.1, 2.2 <-> 2.2: 9.2.1 and 7.2.1 SSP 2.3, 2.4: 10.3-2021.10
RA	FSP 3.5.0: 10.3-2021.10 FSP 3.6.0: 10.3-2021.10 FSP 3.7.0: 10.3-2021.10 FSP 3.8.0: 10.3-2021.10 FSP 3.9.0: 10.3-2021.10 FSP 4.0.0: 10.3-2021.10 FSP 4.1.0: 10.3-2021.10 FSP 4.2.0: 10.3-2021.10 FSP 4.3.0: 10.3-2021.10 FSP 4.4.0: 10.3-2021.10
RE	RE SDK 1.1.0: 6.3.1(2017 q2)

1.3 Supported Toolchains – Linux Hosted

The following toolchains are supported in e² studio:

- Linaro GCC tested version 7.3.1-201805
- GNU Arm Embedded tested version 7.3.1.2018.06022
- GNU Tools for ARM Embedded Processors for RA 9.3.1.20200408 (2020-q2-update)
- GNU Tools for ARM Embedded Processors for RA 10.3-2021.10
- GCC for Renesas 8.3.0.202204-GNURX Linux Toolchain (ELF)
- LLVM for Renesas RL78 10.0.0.202301 Linux Toolchain (ELF Format)

2. Device Support

2.1 **Project Generator Support**

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

amily	Group	Devices
	DA1459x	DA14595,(Debug Support Only)
	DA1469x	DA14691, DA14695, DA14697, DA14699,(Debug Support Only)
DA	DA1470x	DA14701, DA14705, DA14706, DA14708,(Debug Support Only)
	DA16200	DA16200,(Debug Support Only)
	DA16600	DA16600,(Debug Support Only)
EC-1	EC-1	R9A06G043
	RA2	R7FA2A1AB, R7FA2E1A5, R7FA2E1A7, R7FA2E1A8, R7FA2E1A9, R7FA2E2A3, R7FA2E2A5, R7FA2E2A7, R7FA2L1A9, R7FA2L1AB
	RA4	R7FA4E10B, R7FA4E10D, R7FA4E2B9, R7FA4M1AB, R7FA4M2AE R7FA4M2AC, R7FA4M2AD, R7FA4M3AD, R7FA4M3AE, R7FA4M3AF, R7FA4T1B9, R7FA4T1BB, R7FA4W1AD
RA	RA6	R7FA6E10D, R7FA6E10F, R7FA6E2B9, R7FA6E2BB, R7FA6M1AD R7FA6M2AD, R7FA6M2AF, R7FA6M3AF, R7FA6M3AH, R7FA6M4AD, R7FA6M4AE, R7FA6M4AF, R7FA6M5AG, R7FA6M5AH, R7FA6M5BF, R7FA6M5BG, R7FA6M5BH, R7FA6T1AB, R7FA6T1AD, R7FA6T2AB, R7FA6T2AD, R7FA6T2BB R7FA6T2BD, R7FA6T3BB
	RE01B	R7F0E01BD2DNB
55	RE01_1500KB	R7F0E014D2CFB, R7F0E014D2CFP, R7F0E015D2CFB, R7F0E015D2CFP, R7F0E016D2DBN, R7F0E017D2DBN
RE	RE01_256KB	R7F0E01082CFM, R7F0E01082CFP, R7F0E01082DBH, R7F0E01082DBR, R7F0E01082DNG, R7F0E01182CFM, R7F0E01182CFP, R7F0E01182DBH, R7F0E01182DBR, R7F0E01182DNG
	C1H	R7F701260, R7F701270
	C1M	R7F701263, R7F701271
	C1M-A1	R7F701278
	C1M-A2	R7F701275
	D1L1	R7F701401, R7F701421
	D1L2	R7F701402, R7F701422
	D1M1	R7F701404, R7F701405
	D1M1-V2	R7F701442, R7F701462
DUASA	D1M2	R7F701408, R7F701410, R7F701428, R7F701430
RH850	E1L	R7F701201, R7F701205
	E1M-S	R7F701202, R7F701204
	E1M-S2	R7F701215, R7F701216
	-	R7F701Z05, R7F701Z06, R7F701Z07
	F1H	R7F701501, R7F701502, R7F701503, R7F701506, R7F701507, R7F701508, R7F701511, R7F701512, R7F701513, R7F701526, R7F701527, R7F701528, R7F701529, R7F701530, R7F701531, R7F701534
	-	R7F701521, R7F701522, R7F701524, R7F701525

F1K	R7F701542, R7F701543, R7F701546, R7F701547, R7F701557, R7F701560, R7F701561, R7F701562, R7F701563, R7F701566, R7F701567, R7F701577, R7F701580, R7F701581, R7F701582, R7F701583, R7F701586, R7F701587, R7F701597, R7F701602, R7F701603, R7F701610, R7F701611, R7F701612, R7F701613, R7F701620, R7F701621, R7F701622, R7F701623
F1KH	R7F701708, R7F701709, R7F701710, R7F701711, R7F701714, R7F701715
F1KM	R7F701644, R7F701645, R7F701646, R7F701647, R7F701648, R7F701649, R7F701650, R7F701651, R7F701652, R7F701653, R7F701684, R7F701685, R7F701686, R7F701687, R7F701688, R7F701689, R7F701690, R7F701691, R7F701692, R7F701693, R7F701694, R7F701695, R7F701760, R7F701762, R7F701764, R7F701A55, R7F701A56, R7F701A57, R7F701A58, R7F701A59, R7F701A60
F1L	R7F701002xAFP, R7F701003xAFP, R7F701006xAFP, R7F701007xAFP, R7F701008xAFP, R7F701009xAFP, R7F701010xAFP, R7F701011xAFP, R7F701012xAFP, R7F701013xAFP, R7F701014xAFP, R7F701015xAFP, R7F701016xAFP, R7F701017xAFP, R7F701018xAFP, R7F701019xAFP, R7F701020xAFP, R7F701021xAFP, R7F701022xAFP, R7F701023xAFP, R7F701024xAFP, R7F701025xAFP, R7F701026xAFP, R7F701027xAFP, R7F701028xAFP, R7F701029xAFP, R7F701030xAFP, R7F701028xAFP, R7F701029xAFP, R7F701030xAFP, R7F701032xAFP, R7F701033xAFP, R7F701034xAFP, R7F701040, R7F701041, R7F701042, R7F701043, R7F701044, R7F701045, R7F701046, R7F701047, R7F701048, R7F701049, R7F701050, R7F701051, R7F701052, R7F701053, R7F701054, R7F701055, R7F701056, R7F701057
F1M	R7F701544, R7F701545, R7F701548, R7F701549, R7F701552, R7F701553, R7F701564, R7F701565, R7F701568, R7F701569, R7F701572, R7F701573
P1H-C	R7F701370AEEBG, R7F701371EABG, R7F701372EABG, R7F701396EABG
P1L-C	R7F701388, R7F701389, R7F701390, R7F701391
P1M	R7F701304, R7F701305, R7F701310, R7F701311, R7F701312, R7F701313, R7F701314, R7F701315, R7F701318, R7F701319, R7F701320, R7F701321, R7F701322, R7F701323
P1M-C	R7F701373xABG, R7F701374xAFP, R7F701397xABG
P1M-E	R7F701375, R7F701376, R7F701377, R7F701378, R7F701379, R7F701380, R7F701381, R7F701382, R7F701383, R7F701384, R7F701385, R7F701386
-	R7F701060xAFP, R7F701062xAFP, R7F701064xAFP, R7F701065xAFP, R7F701067xAFP, R7F701069xAFP, R7F701071xAFP
U2A-EVA	R7F702Z19A, R7F702Z19B
U2A16	R7F702300, R7F702300A, R7F702300B
U2A6	R7F702302
U2A8	R7F702301, R7F702301A, R7F702301B
U2B10	R7F70254x_Fusa, R7F70254x_Performance, R7F702Z21, R7F702Z26

	U2B24	R7F702Z23, R7F702Z28
	U2B6	R7F70255x, R7F702Z22
	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
	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
RL78	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, R5F11KLF, R5F11KLG, R5F11LLE, R5F11LLF, R5F11LLG
	F23	R7F123FBG, R7F123FGG, R7F123FLG, R7F123FMG,(Debug Support Only)
	F24	R7F124FBJ, R7F124FGJ, R7F124FLJ, R7F124FMJ, R7F124FPJ
	FGIC	RAJ240055, RAJ240057, RAJ240090, RAJ240100, RAJ240310,(Debug Support Only)
	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

020-0		Decumentation
	G13	Bootamentation Telease Note R5F1006A, R5F1006C, R5F1006D, R5F1006E, R5F1007A, R5F1007C, R5F1007D, R5F1007E, R5F1008A, R5F1008C, R5F1008D, R5F1008E, R5F1007A, R5F100BA, R5F1008C, R5F1008D, R5F1008E, R5F100AG, R5F100BA, R5F100BC, R5F100BD, R5F100E, R5F100CE, R5F100BG, R5F100CG, R5F100EG, R5F100EC, R5F100CE, R5F100CE, R5F100FD, R5F100EG, R5F100EC, R5F100CE, R5F100FD, R5F100EG, R5F100EF, R5F100FG, R5F100FD, R5F100EG, R5F100FF, R5F100GG, R5F100GG, R5F100GD, R5F100FF, R5F100GG, R5F100GG, R5F100GD, R5F100EG, R5F100FF, R5F100GG, R5F100GH, R5F100GJ, R5F100GK, R5F100GG, R5F100GG, R5F100GJ, R5F100GK, R5F100GF, R5F100JC, R5F100JL, R5F100JL, R5F100GK, R5F100JC, R5F100JL, R5F100JL, R5F100GK, R5F100GF, R5F100JL, R5F100JL, R5F100JL, R5F100GK, R5F100GF, R5F100JL, R5F100JL, R5F100JK, R5F100GK, R5F100GG, R5F100JL, R5F100JK, R5F100JL, R5F100JL, R5F100LC, R5F100JL, R5F100JL, R5F100JL, R5F100MK, R5F100PR, R5F100SH, R5F100SJ, R5F100JK, R5F100PL, R5F100FR, R5F101FR, R5F101AG, R5F101AG, R5F101AG, R5F101BD, R5F101BB, R5F101AG, R5F101AG, R5F101AG, R5F101BD, R5F101BE, R5F101AG, R5F101AG, R5F101AG, R5F101BC, R5F101BD, R5F101AG, R5F101AG,
	G13A	R5F140FK, R5F140FL, R5F140GK, R5F140GL, R5F140LK, R5F140LL, R5F140PK, R5F140PL
_	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, R5F104GF, R5F104GG, R5F104GH, R5F104GJ, R5F104GK, R5F104GL, R5F104JC, R5F104JD, R5F104JE, R5F104JF, R5F104JG, R5F104JL, R5F104JJ, R5F104LC, R5F104LD, R5F104LE, R5F104LF, R5F104LG, R5F104LH, R5F104LJ, R5F104LK, R5F104LL, R5F104MF, R5F104MG, R5F104MH, R5F104MJ, R5F104MK, R5F104ML, R5F104PF, R5F104PG, R5F104PH, R5F104PJ, R5F104PK, R5F104PL
	G15	R5F12007, R5F12008, R5F12017, R5F12018, R5F12047, R5F12048, R5F12067, R5F12068

G1A R5F10E8A, R5F10E8C, R5F10E8B, R5F10E8E, R5F10EGA, R5F10EGC, R5F10EGD, R5F10EGE, R5F10ELC, R5F10ELD, R5F10ELE G1C R5F10EGD, R5F10EGE, R5F10LC, R5F10ELD, R5F10FMD, R5F10FLC, R5F10FLC, R5F10FLC, R5F10FMC, R5F10FMD, R5F10FLC, R5F10FLD, R5F10FLE, R5F11BBC, R5F11BEC, G1E R5F10FME G1F R5F10FME R5F11BCC, R5F11BGC, R5F11BBC, R5F11BLC, R5F11BLC, R5F11BCE, R5F11BGC, R5F11BBC, R5F11BL, R5F11BL, R5F11E6E, R5F11BGC, R5F11BBC, R5F11BL, R5F11BL, R5F11EAB, R5F11EAA, R5F11EBA, R5F11EBA, R5F11EFA, R5F11EAB, R5F11EAA, R5F11EBA, R5F11EBA, R5F11EFA, R5F11VBC, R5F11VLG G1H R5F11VBC, R5F11FLL, R5F11FLL, G1K R5F11VGT, R5F11Y6B, R5F1127A, R5F11Y6B, G1N R5F112FLA, R5F1127A, R5F11Y6B, R5F1127A, R5F11Y6B, R5F1127A, R5F112BA G1P R5F11V67, R5F11Y6B, R7F102G6C, R7F102G6E, R7F102G6C, R7F102G6E, R7F102G6E, R7F102G6C, R7F102G6C, R7F102G6E, R7F102G6C, R7F102G6E, R7F102G6C, R7F102G6C, R7F100G3B, R7F100G6B, R7F1002G6B, R7F1002G6E, R7F100G6B, R7F100G5B, R7F100G3B, R7F100G6B, R7F100G6B, R7F100G6B, R7F100G5B, R7F100G5B, R7F100G6B, R7F100G6B, R7F100G6B, R7F100G5B, R7F100G5B, R7F100G6B, R7F100G6B, R7F100G6B, R7F100G5B, R7F100G5B, R7F100G5B, R7F100G6B, R7F100G6B, R7F100G5B, R7F100G5B, R7F100G6B, R7F100G6B, R7F100G6B, R7F100G5B, R7F100G5B, R7F100G5B, R7F100G6B, R7F100G6B, R7F100G5B, R7F100G5B, R7F100G5B, R7F100G6B, R7F100G6B, R7F100G5B, R7F100G5B, R7F100G5B, R7F100G5B, R7F100G6B, R7F100G5B, R7F100G5B, R7F100G5B, R7F100G5B, R7F100G6B, R7F100G5B, R7F100G5B, R7F100G5B, R7F100G5B, R7F100G6B, R7F100G5B, R7F100G5B, R7F100G5B, R	G16	R5F1211A, R5F1211C, R5F1214A, R5F1214C, R5F1216A, R5F1216C, R5F1217A, R5F1217C, R5F121BA, R5F121BC
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RSF10FLC, RSF10FLD, RSF10FLE, RSF10FMC, RSF10FMD, G1E RSF10FLC, RSF110FLD, RSF10FLE, RSF110FMC, RSF110FMC, RSF110FLC, G1F RSF11BCC, RSF11BCC, RSF11BLE, RSF11BLC, G1F RSF11BCC, RSF11BCC, RSF11BLE, G1G RSF11BCE, RSF11BCA, RSF11BEB, RSF11BLE, G1G RSF11FLA, RSF11FLA, RSF11FLL G1H RSF11FLA, RSF11FLK, RSF11FLL G1W RSF11VBG, RSF11VLG G1M RSF11YBG, RSF11VLG G1M RSF11YBG, RSF11VB8 G1P RSF1177A, RSF11Y68 G1P RSF1102G4C, R7F102G4E, R7F102G6C, R7F102G6E, R7F102G4C, R7F102G4E, R7F100G4B, R7F100G4B, R7F100G4B, R7F100G4B, R7F100G4B, R7F100G6A, R7F100G6A, R7F100G6A, R7F100G6A, R7F100G6B, R7F100G6B, R7F100G6B, R7F100G6B, R7F100G6B, R7F100G6B, R7F100G6B, R7F100G6B, R7F100G6B, R7F100G4B, R7F1000G4B, R7F1000G4B, R7F100G4B, R7F100G4B, R7F100G4B, R7F100G4B, R	G1C	R5F10JBC, R5F10JGC, R5F10KBC, R5F10KGC
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G1G R5F11EFA G1H RSF11FLJ, RSF11FLK, RSF11FLL G1K RSF11VBG, RSF11VLG G1M RSF11W67, RSF11W68 G1N RSF11Y67, RSF11Y68 G1P RSF1127A, RSF112BA R7F102G4C, R7F102G4E, R7F102G6C, R7F102G6E, R7F102G7C, R7F102G5E, R7F102G8E, R7F102G6C, R7F102G6E, R7F102G7C, R7F102G5E, R7F102G8E, R7F102G6C, R7F102G6E, R7F102G6E, R7F102G6E, R7F102G5E, R7F102G6E, R7F102G6E, R7F102G6E, R7F100G6B, R7F100G5E, R7F100G5B, R7F100G6B, R7F100G6F, R7F100G6B, R7F100G5D, R7F100G5B, R7F100G6F, R7F100G6F, R7F100G6H, R7F100G5D, R7F100G5B, R7F100G6F, R7F100G6F, R7F100G6H, R7F100G5D, R7F100G5K, R7F100G6G, R7F100G6K, R7F100G5J, R7F100G5K, R7F100G6L, R7F100G6K, R7F100GJ, R7F100G5K, R7F100G6L, R7F100G6K, R7F100GJ, R7F100GJ, R7F100G6L, R7F100G5J, R7F100G6K, R7F100GJ, R7F100GJ, R7F100G6L, R7F100G5J, R7F100G6K, R7F100GJ, R7F100GJ, R7F100G6L, R7F100G5J, R7F100G6K, R7F100GM, R7F100G7G, R7F100G5J, R7F100G5J, R7F100G6M, R7F100G7G, R7F100G7G, R7F100G5J, R7F100G5K, R7F100G6M, R7F100G8N, R7F100G7G, R7F100G7G, R7F100G8K, R7F100G6L, R7F101G6C, R7F101G7E, R7F101G7G, R7F101G8E, R7F101G6E, R7F101G6G, R7F101G7E, R7F101G7G, R7F101G8E, R7F101G6G, R7F101G6G, R7F101G7E, R7F101G7G, R7F101G8E, R7F101G6G, R7F101G6G, R7F101G7E, R7F101G7G, R7F101G6E, R7F101G6G, R7F101G6G, R7F101G7E, R7F101G7G, R7F101G8E, R7F101G6G, R7F101G6G, R7F101G7E, R7F101G7G, R7F101G7E, R7F101G6G, R7F101G6G, R7F101G7E, R7F101G7E, R7F101G7E, R5F11NMF, R5F11NMG, R5F10NMC, R5F10NMG, R5F10NMJ, I1C R6F11NGF, R5F10NM	G1F	R5F11BCE, R5F11BGC, R5F11BGE, R5F11BLC, R5F11BLE
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R7F100GBG, R7F100GBH, R7F100GEF, R7F100GCF, R7F100GCG, R7F100GCH, R7F100GCJ, R7F100GEF, R7F100GEG, R7F100GFH, R7F100GGH, R7F100GFF, R7F100GFN, R7F100GFJ, R7F100GGH, R7F100GJ, R7F100GJG, R7F100GJL, R7F100GJJ, R7F100GGN, R7F100GJ, R7F100GJG, R7F100GJH, R7F100GJJ, R7F100GGN, R7F100GJL, R7F100GJN, R7F100GLF, R7F100GLS, R7F100GH, R7F100GJL, R7F100GJN, R7F100GLF, R7F100GLN, R7F100GH, R7F100GHL, R7F100GHJ, R7F100GHJ, R7F100GHJ, R7F100GHL, R7F100GHL, R7F100GPO, R7F100GPJ, R7F100GPK, R7F100GPL, R7F100GPN, R7F100GSJ, R7F100GSK, R7F100GPK, R7F100GSN G24 R7F101G6E, R7F101G6G, R7F101G6E, R7F101G8E, R7F101G6E, R7F101G6G, R7F101G7E, R7F101G7G, R7F101G8E, R7F101G6G, R7F101G6G, R7F101G7E, R7F101G7G, R7F101G8E, R7F101G6G, R7F101G6G, R7F101G7E, R7F101G7G, R7F101G8E, R7F101G6G, R7F101G7E, R7F101G7G, R7F101G7G, R7F101G7E, R5F11NGG, R5F11NLF, R5F11NLG, R5F11NME, R5F11NMF, R5F11NMG, R5F11NLF, R5F11NLG, R5F11NME, R5F11NMF, R5F11NMG, R5F11NLF, R5F11NLG, R5F11NME, R5F10NME, R5F10NLG, R5F107AE, R5F107DE I1A R5F107AC, R5F107AC, R5F107AE, R5F10NPG R5F10NLE, R5F10NLG, R5F10NME, R5F10NPG, R5F10NMJ, R5F10NLE, R5F10NLG, R5F10NME, R5F10NPG, R5F10NPJ, R5F10NPL, R5F10NLE, R5F10NLC, R5F10NPG, R5F10NPG, R5F10NPJ, R5F10NPL, R5F11768, R5F1176A, R5F11778, R5F1177A, R5F117A8, R5F1176A, R5F117AC, R5F11778, R5F1177A, R5F117A8, R5F1176C	G22	R7F102G7E, R7F102G8C, R7F102G8E, R7F102GAC, R7F102GAE, R7F102GBC, R7F102GBE, R7F102GCC, R7F102GCE, R7F102GEC,
G24 R7F101G8G, R7F101GAE, R7F101GAG, R7F101GBE, R7F101GBG, R7F101GEE, R7F101GEG, R7F101GFE, R7F101GFG, R7F101GGE, R7F101GGG, R7F101GJE, R7F101GJG, R7F101GLE, R7F101GLG H1D R5F11NGF, R5F11NGG, R5F11NLF, R5F11NLG, R5F11NME, R5F11NMF, R5F11NMG, R5F11PLF, R5F11PLG, R5F11RMG I1A R5F1076C, R5F107AC, R5F107AE, R5F107DE I1B R5F10MME, R5F10MMG, R5F10MPE, R5F10MPG R5F10NLE, R5F10NLG, R5F10NME, R5F10NMG, R5F10NMJ, I1C R5F10NLE, R5F10NML_DUAL, R5F10NPG, R5F10NPJ, R5F10NPL, R5F10NPL_DUAL I1C-2 R5F11TLE, R5F11TLG R5F11768, R5F1176A, R5F11778, R5F1177A, R5F117A8, R5F117AA, R5F117AC, R5F117BA, R5F117BC, R5F117GA, R5F117GC	G23	R7F100GBG, R7F100GBH, R7F100GBJ, R7F100GCF, R7F100GCG, R7F100GCH, R7F100GCJ, R7F100GEF, R7F100GEG, R7F100GEH, R7F100GEJ, R7F100GFF, R7F100GFG, R7F100GFH, R7F100GFJ, R7F100GFK, R7F100GFL, R7F100GFN, R7F100GGF, R7F100GGG, R7F100GGH, R7F100GJF, R7F100GJG, R7F100GJH, R7F100GJJ, R7F100GJK, R7F100GJL, R7F100GJN, R7F100GLF, R7F100GLG, R7F100GLH, R7F100GLJ, R7F100GLK, R7F100GLL, R7F100GLN, R7F100GMG, R7F100GMH, R7F100GMJ, R7F100GMK, R7F100GML, R7F100GMN, R7F100GPG, R7F100GPH, R7F100GPJ, R7F100GPK, R7F100GPL, R7F100GPN, R7F100GSJ, R7F100GSK, R7F100GSL, R7F100GSN
R5F11NMF, R5F11NMG, R5F11PLF, R5F11PLG, R5F11RMG I1A R5F1076C, R5F107AC, R5F107AE, R5F107DE I1B R5F10MME, R5F10MMG, R5F10MPE, R5F10MPG R5F10NLE, R5F10NLG, R5F10NME, R5F10NMG, R5F10NMJ, I1C R5F10NLL, R5F10NML_DUAL, R5F10NPG, R5F10NPJ, R5F10NPL, R5F10NPL_DUAL I1C-2 R5F11TLE, R5F11TLG R5F11768, R5F1176A, R5F11778, R5F1177A, R5F117A8, R5F117GC R5F117GC	G24	R7F101G8G, R7F101GAE, R7F101GAG, R7F101GBE, R7F101GBG, R7F101GEE, R7F101GEG, R7F101GFE, R7F101GFG, R7F101GGE,
I1B R5F10MME, R5F10MMG, R5F10MPE, R5F10MPG R5F10NLE, R5F10NLG, R5F10NME, R5F10NMG, R5F10NMJ, I1C R5F10NLL, R5F10NML_DUAL, R5F10NPG, R5F10NPJ, R5F10NPL, R5F10NPL_DUAL I1C-2 R5F11TLE, R5F11TLG R5F11768, R5F1176A, R5F11778, R5F1177A, R5F117A8, I1D R5F117AA, R5F117AC, R5F117BA, R5F117BC, R5F117GA, R5F117GC	H1D	
International and the second	I1A	R5F1076C, R5F107AC, R5F107AE, R5F107DE
I1C R5F10NML, R5F10NML_DUAL, R5F10NPG, R5F10NPJ, R5F10NPL, R5F10NPL_DUAL I1C-2 R5F11TLE, R5F11TLG R5F11768, R5F1176A, R5F11778, R5F1177A, R5F117A8, I1D R5F117AA, R5F117AC, R5F117BA, R5F117BC, R5F117GA, R5F117GC	l1B	R5F10MME, R5F10MMG, R5F10MPE, R5F10MPG
R5F11768, R5F1176A, R5F11778, R5F1177A, R5F117A8, I1D R5F117AA, R5F117AC, R5F117BA, R5F117BC, R5F117GA, R5F117GC	I1C	R5F10NML, R5F10NML_DUAL, R5F10NPG, R5F10NPJ, R5F10NPL,
I1D R5F117AA, R5F117AC, R5F117BA, R5F117BC, R5F117GA, R5F117GC	I1C-2	,
I1E R5F11CBC, R5F11CCC	I1D	R5F117AA, R5F117AC, R5F117BA, R5F117BC, R5F117GA,
	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, R5F11MPF, R5F11MPG
	L1C	R5F110ME, R5F110MF, R5F110MG, R5F110MH, R5F110MJ, R5F110NE, R5F110NF, R5F110NG, R5F110NH, R5F110NJ, R5F110PE, R5F110PF, R5F110PG, R5F110PH, R5F110PJ, R5F111ME, R5F111MF, R5F111MG, R5F111MH, R5F111MJ, R5F111NE, R5F111NF, R5F111NG, R5F111NH, R5F111NJ, 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, R5F51305B, R5F51306, R5F51306B, R5F51307, R5F51308
	13T	R5F513T3, R5F513T5
	140	R5F51403, R5F51405, R5F51406
	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
	23E-A	R5F523E5A, R5F523E5S, R5F523E6A, R5F523E6S
	23E-B	R5F523E5B, R5F523E6B
RX	23T	R5F523T3, R5F523T5
	23W	R5F523W7, R5F523W8
	24T	R5F524T8, R5F524TA, R5F524TB, R5F524TC, R5F524TE
	24U	R5F524UB, R5F524UC, R5F524UE
	26T	R5F526T8, R5F526T9, R5F526TA, R5F526TB, R5F526TF, R5F526TF_DUAL
	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
	631	R5F56316, R5F56317, R5F56318, R5F5631A, R5F5631B, R5F5631D, R5F5631E, R5F5631F, R5F5631G, R5F5631J, R5F5631K, R5F5631M, 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
	651	R5F56514, R5F56517, R5F56519, R5F5651C, R5F5651C_DUAL, R5F5651E, R5F5651E_DUAL
		R5F56519DMB, R5F5651EDMB, R5F5651EDMB_DUAL,(Debug Support Only)
	65N	R5F565N4, R5F565N7, R5F565N9, R5F565NC, R5F565NC_DUAL, R5F565NE, R5F565NE_DUAL
		R5F565N9DMB, R5F565NEDMB, R5F565NEDMB_DUAL,(Debug Support Only)
	65W-A	R5F565WE, R5F565WE_DUAL,
	660	R5F56604A, R5F56604B, R5F56604C, R5F56604D, R5F56604E, R5F56604F, R5F56604G, R5F56604H, R5F56609A, R5F56609B, R5F56609C, R5F56609D, R5F56609E, R5F56609F, R5F56609G, R5F56609H
	66N	R5F566ND, R5F566ND_DUAL, R5F566NN, R5F566NN_DUAL
	66T	R5F566TA, R5F566TAXXFL, R5F566TE, R5F566TEXXFL, R5F566TF, R5F566TK
	671	R5F56719, R5F56719_DUAL, R5F5671C, R5F5671C_DUAL, R5F5671E, R5F5671E_DUAL
	71M	R5F571MF, R5F571MG, R5F571MJ, R5F571ML
	72M	R5F572MD, R5F572MD_DUAL, R5F572MN, R5F572MN_DUAL
	72N	R5F572ND, R5F572ND_DUAL, R5F572NN, R5F572NN_DUAL
	72T	R5F572TF, R5F572TK
	-	R0E5571MLDMBXX,(Debug Support Only)
	A1	R7S721000, R7S721000_DualSPI, R7S721001, R7S721001_DualSPI, R7S721010, R7S721010_DualSPI, R7S721011, R7S721011_DualSPI, R7S721020, R7S721020_DualSPI, R7S721021, R7S721021_DualSPI, R7S721030, R7S721030_DualSPI, R7S721031, R7S721031_DualSPI, R7S721034, R7S721034_DualSPI
	A2	R7S921040, R7S921041, R7S921042, R7S921043, R7S921045, R7S921046, R7S921047, R7S921048, R7S921051, R7S921052, R7S921053, R7S921056, R7S921057, R7S921058
RZ	A3UL	R9A07G063U01, R9A07G063U02
	G1E	R8A77450, R8A77450_Core1,(Debug Support Only)
	G1M	R8A77430, R8A77430_Core1,(Debug Support Only)
	G2L	R9A07G044C12GBG_CM33, R9A07G044C22GBG_CM33, R9A07G044L13GBG_CM33, R9A07G044L14GBG_CM33, R9A07G044L23GBG_CM33, R9A07G044L24GBG_CM33, R9A07G044LC_M33, R9A07G044L_M33
	G2UL	R9A07G043U11GBG_CM33, R9A07G043U12GBG_CM33
	N2L	R9A07G084M04, R9A07G084M08

	T1	R7S910001, R7S910002, R7S910006, R7S910007, R7S910011, R7S910013, R7S910015, R7S910015_M3, R7S910016, R7S910016_M3, R7S910017, R7S910017_M3, R7S910018, R7S910018_M3, R7S910025, R7S910026, 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							
	T1-M	R7S910020, R7S910021, R7S910022, R7S910023, R7S910120, R7S910121, R7S910122, R7S910123							
	T2L	R9A07G074M01, R9A07G074M04, R9A07G074M05, R9A07G074M08							
	T2M	R9A07G075M01, R9A07G075M05, R9A07G075M21_CPU0, R9A07G075M21_CPU1, R9A07G075M22_CPU0, R9A07G075M22_CPU1, R9A07G075M24_CPU0, R9A07G075M24_CPU1, R9A07G075M26_CPU0, R9A07G075M26_CPU1, R9A07G075M27_CPU0, R9A07G075M27_CPU1, R9A07G075M28_CPU0, R9A07G075M28_CPU1							
	V2L	R9A07G054L13GBG_CM33, R9A07G054L13_M33, R9A07G054L14GBG_CM33, R9A07G054L14_M33, R9A07G054L23GBG_CM33, R9A07G054L23_M33, R9A07G054L24GBG_CM33, R9A07G054L24_M33							
	S1JA	R7FS1JA783A01CFM, R7FS1JA783A01CNE, R7FS1JA783A01CNF, R7FS1JA782A01CBT, R7FS1JA783A01CFJ							
	S124	R7FS124762A01CLM, R7FS124763A01CFL, R7FS124763A01CFM, R7FS124772A01CLM, R7FS124773A01CFL, R7FS124773A01CFM, R7FS124773A01CNB, R7FS124773A01CNE, R7FS124773A01CNF							
	S128	R7FS128782A01CLM, R7FS128783A01CFJ, R7FS128783A01CFL, R7FS128783A01CFM, R7FS128783A01CNE, R7FS128783A01CNG							
	S3A1	R7FS3A17C2A01CLK, R7FS3A17C3A01CFB, R7FS3A17C2A01CBJ, R7FS3A17C2A01CLJ, R7FS3A17C3A01CFM, R7FS3A17C3A01CFP, R7FS3A17C3A01CNB							
	S3A3	R7FS3A37A2A01CLK, R7FS3A37A3A01CFB, R7FS3A37A2A01CBJ, R7FS3A37A2A01CLJ, R7FS3A37A3A01CFP, R7FS3A37A3A01CFM, R7FS3A37A3A01CNB							
	S3A6	R7FS3A6782A01CLJ, R7FS3A6783A01CFL, R7FS3A6783A01CFM, R7FS3A6783A01CFP, R7FS3A6783A01CNB, R7FS3A6783A01CNE, R7FS3A6783A01CNF							
Synergy	S3A7	R7FS3A77C2A01CLK, R7FS3A77C3A01CFB, R7FS3A77C2A01CBJ, R7FS3A77C3A01CFP, R7FS3A77C2A01CLJ, R7FS3A77C3A01CFM, R7FS3A77C2A01CNB, R7FS3A77C3A01CNB							
	S5D3	R7FS5D37A2A01CLJ, R7FS5D37A3A01CFP, R7FS5D37A3A01CFM, R7FS5D37A3A01CNB							
	S5D5	R7FS5D57A2A01CLK, R7FS5D57A3A01CFB, R7FS5D57A3A01CFP, R7FS5D57C2A01CLK, R7FS5D57C3A01CFB, R7FS5D57C3A01CFP							
	S5D9	R7FS5D97C2A01CBG, R7FS5D97C3A01CFC, R7FS5D97C2A01CLK, R7FS5D97C3A01CFB, R7FS5D97C3A01CFP, R7FS5D97E2A01CBG, R7FS5D97E3A01CFC, R7FS5D97E2A01CLK, R7FS5D97E3A01CFB, R7FS5D97E3A01CFP							
	S7G2	R7FS7G27H2A01CBD, R7FS7G27G2A01CBD, R7FS7G27H2A01CBG, R7FS7G27G2A01CBG, R7FS7G27H2A01CFC, R7FS7G27H3A01CFC, R7FS7G27H3A01CFC, R7FS7G27G3A01CFC, R7FS7G27H2A01CLK,							

R7FS7G27G2A01CLK, R7FS7G27H3A01CFB, R7FS7G27G3A01CFB, R7FS7G27G3A01CFP



2.2 Code Generator Support – Windows Host Only

Family	Group	Devices
	D1A	R5F10CGB, R5F10CGC, R5F10CGD, R5F10CLD, R5F10CMD, R5F10CME, R5F10DGC, R5F10DGD, R5F10DGE, R5F10DLD, R5F10DLE, R5F10DMD, R5F10DME, R5F10DMF, R5F10DMG, R5F10DMJ, R5F10DPE, R5F10DPF, R5F10DPG, R5F10DPJ, 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
	F1E	R5F11KLE, R5F11KLF, R5F11KLG, R5F11LLE, R5F11LLF, 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

G13	R5F1006A, R5F1006C, R5F1006D, R5F1006E, R5F1007A, R5F1007C, R5F1007D, R5F1007E, R5F1008A, R5F1008C, R5F1008D, R5F1008E, R5F100AA, R5F100AC, R5F100AD, R5F100AE, R5F100BF, R5F100BG, R5F100CA, R5F100BC, R5F100DD, R5F100EE, R5F100BF, R5F100EG, R5F100CA, R5F100EC, R5F100ED, R5F100EE, R5F100EF, R5F100EG, R5F100EA, R5F100FA, R5F100FD, R5F100FD, R5F100FE, R5F100FF, R5F100GA, R5F100FA, R5F100FJ, R5F100FL, R5F100FL, R5F100GA, R5F100GD, R5F100GD, R5F100GE, R5F100FL, R5F100GA, R5F100GJ, R5F100GD, R5F100GE, R5F100JC, R5F100JD, R5F100JF, R5F100GJ, R5F100GK, R5F100GL, R5F100JC, R5F100JD, R5F100JE, R5F100JF, R5F100JG, R5F100JH, R5F100JC, R5F100JH, R5F100JL, R5F100JC, R5F100LD, R5F100GK, R5F100F, R5F100JC, R5F100JK, R5F100JL, R5F100LD, R5F100L, R5F100F, R5F100JG, R5F100JH, R5F100LJ, R5F100LD, R5F100L, R5F100F, R5F100JG, R5F100JH, R5F100JJ, R5F100LK, R5F100LL, R5F100F, R5F100JG, R5F100H, R5F100JJ, R5F100HK, R5F100HL, R5F100F, R5F100F, R5F100FH, R5F100FJ, R5F100FK, R5F100HL, R5F100FF, R5F100FG, R5F100FH, R5F100FJ, R5F101FA, R5F1016C, R5F1016D, R5F1016B, R5F100FH, R5F100FJ, R5F101FA, R5F1017C, R5F1016D, R5F1018D, R5F1017C, R5F1017D, R5F1017C, R5F1018D, R5F1018D, R5F1017B, R5F1017C, R5F1017A, R5F1017C, R5F1011AD, R5F1018E, R5F1017AF, R5F1017G, R5F1017A, R5F101FC, R5F1011AD, R5F1011BE, R5F1017F, R5F1017G, R5F1011AA, R5F1011CC, R5F1011DD, R5F1011E, R5F1011AF, R5F1011GG, R5F1011EA, R5F101FC, R5F1011DD, R5F1011E, R5F1011FF, R5F1011GG, R5F1011EA, R5F1011FC, R5F1011FD, R5F1011FD, R5F1011EG, R5F1011EA, R5F1011FA, R5F1011FJ, R5F1011FD, R5F1011FF, R5F1011GA, R5F1011GC, R5F1011GD, R5F1011FD, R5F1011GA, R5F1011GA, R5F1011GA, R5F1011GB, R5F1011FD, R5F1011GA, R5F1011GA, R5F1011GA, R5F1011GA, R5F1011GF, R5F1011GA, R5F1011GA, R5F1011GA, R5F1011GA, R5F1011GA, R5F1011GA, R5F1011GA, R5F1011GA, R5F1011GA, R5F1011JA, R5F1011JA, R5F1011JA, R5F1011JA, R5F1011GA, R5F1011GA, R5F1011JA, R5F1011JA, R5F1011JA, R5F1011AK, R5F1011JA, R5F1011FA, R5F1011JA, R5F1011JA, R5F1011JA, R5F1011AK, R5F1011HA, R5F1011FA, R5F1011JA, R5F1011JA, R5F1011JA, R5F1011AK, R5F1011
G13A	R5F140FK, R5F140FL, R5F140GK, R5F140GL, R5F140LK, R5F140LL, R5F140PK, R5F140PL
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, R5F104GF, R5F104GG, R5F104GH, R5F104GJ, R5F104GK, R5F104GL, R5F104JC, R5F104JD, R5F104JE, R5F104JF, R5F104JG, R5F104JH, R5F104JJ, R5F104LC, R5F104LD, R5F104LE, R5F104JF, 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
G1F	R5F11B7C, R5F11B7E, R5F11BBC, R5F11BBE, R5F11BCC, R5F11BCE, R5F11BGC, 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, R5F10NML, R5F10NML, R5F10NML_DUAL, R5F10NPG, R5F10NPJ, R5F10NPL, R5F10NPL_DUAL
	I1C-2	R5F11TLE, R5F11TLG
	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
RX	231	R5F52315, R5F52316, R5F52317, R5F52318
	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
	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

2.3 Smart Configurator Support

		p Devices						
	F23	R7F123FBG, R7F123FGG, R7F123FLG, R7F123FMG						
_	F24	R7F124FBJ, R7F124FGJ, R7F124FLJ, R7F124FMJ, R7F124FPJ						
	0.45	R5F12007, R5F12008, R5F12017, R5F12018, R5F12047, R5F12048,						
-	G15	R5F12067, R5F12068 R5F1211A, R5F1211C, R5F1214A, R5F1214C, R5F1216A, R5F1216C,						
	G16	R5F1217A, R5F1217C, R5F1214A, R5F1214C, R5F1210A, R5F1210C, R5F1217A, R5F1217C, R5F121BA, R5F121BC						
_	0.0	R7F102G4C, R7F102G4E, R7F102G6C, R7F102G6E, R7F102G7C,						
		R7F102G7E, R7F102G8C, R7F102G8E, R7F102GAC, R7F102GAE,						
	G22	R7F102GBC, R7F102GBE, R7F102GCC, R7F102GCE, R7F102GEC, R7F102GEC, R7F102GEE, R7F102GFC, R7F102GFE, R7F102GGC, R7F102GGE						
—	622	R7F102GEE, R7F102GFC, R7F102GFE, R7F102GGC, R7F102GGE R7F100GAF, R7F100GAG, R7F100GAH, R7F100GAJ, R7F100GBF,						
		R7F100GBG, R7F100GBH, R7F100GBJ, R7F100GCF, R7F100GCG,						
RL78		R7F100GCH, R7F100GCJ, R7F100GEF, R7F100GEG, R7F100GEH,						
		R7F100GEJ, R7F100GFF, R7F100GFG, R7F100GFH, R7F100GFJ,						
		R7F100GFK, R7F100GFL, R7F100GFN, R7F100GGF, R7F100GGG, R7F100GGJ, R7F100GGJ, R7F100GGK, R7F100GGL, R7F100GGN,						
		R7F100GJF, R7F100GJG, R7F100GJH, R7F100GJJ, R7F100GJK,						
		R7F100GJL, R7F100GJN, R7F100GLF, R7F100GLG, R7F100GLH,						
		R7F100GLJ, R7F100GLK, R7F100GLL, R7F100GLN, R7F100GMG, R7F100GMH, R7F100GMJ, R7F100GMK, R7F100GML, R7F100GMN,						
		R7F100GPG, R7F100GPH, R7F100GPJ, R7F100GPK, R7F100GPL,						
_	G23	R7F100GPN, R7F100GSJ, R7F100GSK, R7F100GSL, R7F100GSN						
		R7F101G6E, R7F101G6G, R7F101G7E, R7F101G7G, R7F101G8E,						
		R7F101G8G, R7F101GAE, R7F101GAG, R7F101GBE, R7F101GBG, R7F101GEG, R7F101GEG, R7F101GEG, R7F101GGE, R7F10GE, R7F101GGE, R7F101GGE, R7F101GGE, R7F10GE,						
	G24	R7F101GEE, R7F101GEG, R7F101GFE, R7F101GFE, R7F101GEG, R7F101GEG, R7F101GLG						
	110	R5F51101, R5F51103, R5F51104, R5F51105, R5F5110H, R5F5110J						
	111	R5F51111, R5F51113, R5F51114, R5F51115, R5F51116, R5F51117, R5F51118, R5F5111J						
_	113	R5F51135, R5F51136, R5F51137, R5F51138						
	130	R5F51303, R5F51305, R5F51305B, R5F51306, R5F51306B, R5F51307, R5F51308						
_	13T	R5F513T3, R5F513T5						
	140	R5F51403, R5F51405, R5F51406						
	230	R5F52305, R5F52306						
_	231	R5F52315, R5F52316, R5F52317, R5F52318						
RX	23E-A	R5F523E5A, R5F523E5S, R5F523E6A, R5F523E6S						
_	23E-B	R5F523E5B, R5F523E6B						
_	23T	R5F523T3, R5F523T5						
	23W	R5F523W7, R5F523W8						
_	24T	R5F524T8, R5F524TA, R5F524TB, R5F524TC, R5F524TE						
_	24U	R5F524UB, R5F524UC, R5F524UE						
_		R5F526T8, R5F526T9, R5F526TA, R5F526TB, R5F526TF,						
_	26T	R5F526TF_DUAL						
_	64M	R5F564MF, R5F564MG, R5F564MJ, R5F564ML						
	651	R5F56514, R5F56517, R5F56519, R5F5651C, R5F5651C_DUAL, R5F5651E, R5F5651E_DUAL						

	65N	R5F565N4, R5F565N7, R5F565N9, R5F565NC, R5F565NC_DUAL, R5F565NE, R5F565NE_DUAL							
_	660	R5F56604A, R5F56604B, R5F56604C, R5F56604D, R5F56604E, R5F56604F, R5F56604G, R5F56604H, R5F56609A, R5F56609B, R5F56609C, R5F56609D, R5F56609E, R5F56609F, R5F56609G, R5F56609H							
	66N	R5F566ND, R5F566ND, DUAL, R5F566NN, R5F566NN, DUAL							
	66T	R5F566TA, R5F566TE, R5F566TF, R5F566TK							
_									
_	671	R5F56719, R5F56719_DUAL, R5F5671C, R5F5671C_DUAL, R5F5671E, R5F5671E_DUAL							
_	71M	R5F571MF, R5F571MG, R5F571MJ, R5F571ML							
	72M	R5F572MD, R5F572MD_DUAL, R5F572MN, R5F572MN_DUAL							
	72N	R5F572ND, R5F572ND_DUAL, R5F572NN, R5F572NN_DUAL							
	72T	R5F572TF, R5F572TK							
	A2	R7S921040, R7S921041, R7S921042, R7S921043, R7S921045, R7S921046, R7S921047, R7S921048, R7S921051, R7S921052, R7S921053, R7S921056, R7S921057, R7S921058							
	A3UL	R9A07G063U01, R9A07G063U02							
	N2L	R9A07G084M04, R9A07G084M08							
	T2L	R9A07G074M01, R9A07G074M04, R9A07G074M05, R9A07G074M08							
RZ	T2M	R9A07G075M01, R9A07G075M05, R9A07G075M21_CPU0, R9A07G075M21_CPU1, R9A07G075M22_CPU0, R9A07G075M22_CPU1, R9A07G075M24_CPU0, R9A07G075M24_CPU1, R9A07G075M26_CPU0, R9A07G075M26_CPU1, R9A07G075M27_CPU0, R9A07G075M27_CPU1, R9A07G075M28_CPU0, R9A07G075M28_CPU1							
_	G2L	R9A07G044C12GBG_CM33, R9A07G044C22GBG_CM33, R9A07G044L13GBG_CM33, R9A07G044L14GBG_CM33, R9A07G044L23GBG_CM33, R9A07G044L24GBG_CM33, R9A07G044LC_M33, R9A07G044L_M33							
	G2UL	R9A07G043U11GBG_CM33, R9A07G043U12GBG_CM33							
_	V2L	R9A07G054L13GBG_CM33, R9A07G054L13_M33, R9A07G054L14GBG_CM33, R9A07G054L14_M33, R9A07G054L23GBG_CM33, R9A07G054L23_M33, R9A07G054L24GBG_CM33, R9A07G054L24_M33							
	S1JA	R7FS1JA783A01CFM, R7FS1JA783A01CNE, R7FS1JA783A01CNF, R7FS1JA782A01CBT, R7FS1JA783A01CFJ							
	S124	R7FS124762A01CLM, R7FS124763A01CFL, R7FS124763A01CFM, R7FS124772A01CLM, R7FS124773A01CFL, R7FS124773A01CFM, R7FS124773A01CNB, R7FS124773A01CNE, R7FS124773A01CNF							
_	S128	R7FS128782A01CLM, R7FS128783A01CFJ, R7FS128783A01CFL, R7FS128783A01CFM, R7FS128783A01CNE, R7FS128783A01CNG							
Synergy — —	S3A1	R7FS3A17C2A01CLK, R7FS3A17C3A01CFB, R7FS3A17C2A01CBJ, R7FS3A17C2A01CLJ, R7FS3A17C3A01CFM, R7FS3A17C3A01CFP, R7FS3A17C3A01CNB							
	S3A3	R7FS3A37A2A01CLK, R7FS3A37A3A01CFB, R7FS3A37A2A01CBJ, R7FS3A37A2A01CLJ, R7FS3A37A3A01CFP, R7FS3A37A3A01CFM, R7FS3A37A3A01CNB							
	S3A6	R7FS3A6782A01CLJ, R7FS3A6783A01CFL, R7FS3A6783A01CFM, R7FS3A6783A01CFP, R7FS3A6783A01CNB, R7FS3A6783A01CNE, R7FS3A6783A01CNF							

	S3A7	R7FS3A77C2A01CLK, R7FS3A77C3A01CFB, R7FS3A77C2A01CBJ, R7FS3A77C3A01CFP, R7FS3A77C2A01CLJ, R7FS3A77C3A01CFM, R7FS3A77C2A01CNB, R7FS3A77C3A01CNB
	S5D3	R7FS5D37A2A01CLJ, R7FS5D37A3A01CFP, R7FS5D37A3A01CFM, R7FS5D37A3A01CNB
	S5D5	R7FS5D57A2A01CLK, R7FS5D57A3A01CFB, R7FS5D57A3A01CFP, R7FS5D57C2A01CLK, R7FS5D57C3A01CFB, R7FS5D57C3A01CFP
	S5D9	R7FS5D97C2A01CBG, R7FS5D97C3A01CFC, R7FS5D97C2A01CLK, R7FS5D97C3A01CFB, R7FS5D97C3A01CFP, R7FS5D97E2A01CBG, R7FS5D97E3A01CFC, R7FS5D97E2A01CLK, R7FS5D97E3A01CFB, R7FS5D97E3A01CFP
	S7G2	R7FS7G27H2A01CBD, R7FS7G27G2A01CBD, R7FS7G27H2A01CBG, R7FS7G27G2A01CBG, R7FS7G27H2A01CFC, R7FS7G27H3A01CFC, R7FS7G27G2A01CFC, R7FS7G27G3A01CFC, R7FS7G27H2A01CLK, R7FS7G27G2A01CLK, R7FS7G27H3A01CFB, R7FS7G27G3A01CFB, R7FS7G27G3A01CFP
	RA2	R7FA2A1AB, R7FA2E1A5, R7FA2E1A7, R7FA2E1A8, R7FA2E1A9, R7FA2E2A3, R7FA2E2A5, R7FA2E2A7, R7FA2L1A9, R7FA2L1AB
RA	RA4	R7FA4E10B, R7FA4E10D, R7FA4E2B9, R7FA4M1AB, R7FA4M2AB, R7FA4M2AC, R7FA4M2AD, R7FA4M3AD, R7FA4M3AE, R7FA4M3AF, R7FA4T1B9, R7FA4T1BB, R7FA4W1AD
	RA6	R7FA6E10D, R7FA6E10F, R7FA6E2B9, R7FA6E2BB, R7FA6M1AD, R7FA6M2AD, R7FA6M2AF, R7FA6M3AF, R7FA6M3AH, R7FA6M4AD, R7FA6M4AE, R7FA6M4AF, R7FA6M5AG, R7FA6M5AH, R7FA6M5BF, R7FA6M5BG, R7FA6M5BH, R7FA6T1AB, R7FA6T1AD, R7FA6T2AB, R7FA6T2AD, R7FA6T2BB, R7FA6T2BD, R7FA6T3BB
	RE01B	R7F0E01BD2DNB
RE	RE01_1500KB	R7F0E014D2CFB, R7F0E014D2CFP, R7F0E015D2CFB, R7F0E015D2CFP, R7F0E016D2DBN, R7F0E017D2DBN
	RE01_256KB	R7F0E01082CFM, R7F0E01082CFP, R7F0E01082DBH, R7F0E01082DBR, R7F0E01082DNG, R7F0E01182CFM, R7F0E01182CFP, R7F0E01182DBH, R7F0E01182DBR, R7F0E01182DNG



3. Smart Manual Support

Smart manual support is delivered independently of e² studio releases when available. The following devices are available as of January 2023:

- RX110
- RX111
- RX113
- RX130
- RX13T
- RX140
- RX210
- RX220
- RX230
- RX231
- RX23E-A
- RX23W
- RX24T
- RX24U
- RX26T
- RX62G
- RX62T
- RX631
- RX63N
- RX63T
- RX64M
- RX651
- RX65N
- RX660
- RX66T
- RX66N
- RX671
- RX71M
- RX72M
- RX72N
- RX72T

- RL78/G10
- RL78/G11
- RL78/G12
- RL78/G13
- RL78/G14
- RL78/G15
- RL78/G16
- RL78/G1F
- RL78/G22
- RL78/G23
- RL78/L12
- RL78/L13
- RZ/A1H
- RZ/A1L
- RZ/A2M
- RZ/T1
- RZ/T2M
- RZ/N2L
- RA2E1
- RA2E2
- RA2L1
- RA4E1
- RA4E2
- RA4M2
- RA4T1
- RA6E1
- RA6E2
- RA6M4
- RA6M5
- RA6T2
- RA6T3



To view the Smart Manual support in e² studio please use the following method:

- 1. Please open the Smart Manual view. Available on the Renesas Views->Solution Toolkit->Smart Manual menu from the Menu bar.
- 2. Then use the "Install new Smart Manual..." option seen in the figure below:

🎦 Pin Conflicts 📮 Console 🐙 Smart Manual 🗙	(구 수) 🔄 🕮 🕴 🗖 🖬						
Register Search Keyword Search	Install New Smart Manuals						
Go Device: -	Manage Smart Manuals						
(There is no information.)							

3. A dialog is then displayed which shows all available Smart Manuals.

🖸 Install — [
Install Extensions	3
Select extensions to install. Press Finish to proceed with installation. Press the information button to see a detailed overview and a link to more information.	
Find:	ow <u>I</u> nstalled
RL78 Smart Manuals	^
Renesas RL78/G10 Smart Manual (v3.11)	
Smart Manual for RL78/G10 Devices	
Renesas Electronics Corp.	
Renesas RL78/G11 Smart Manual (v2.20)	
Smart Manual for RL78/G11 Devices	
Renesas Electronics Corp.	
Renesas RL78/G12 Smart Manual (v2.20)	
Smart Manual for RL78/G12 Devices	
Renesas Electronics Corp.	
Renesas RL78/G13 Smart Manual (v3.40)	
Smart Manual for RL78/G13 Devices	
Renesas Electronics Corp.	
Renesas RL78/G14 Smart Manual (v3.30)	
Smart Manual for RL78/G14 Devices	
Renesas Electronics Corp.	
Renesas RL78/G1F Smart Manual (v1.10)	
Smart Manual for RI 78/GIE Devicer	*
? <u>Einish</u>	Cancel



4. What is new in 2023-07?

Component	Device	Description								
		The e ² studio installer has been revised to include different modes of install to improve the ease of use for different use cases.								
		We now have 3 modes to choose from:								
		 Lite Install (Recommended) Standard Install Custom Install 								
		Lite Install mode provides a simplified experience focusing on simple coding and debugging. It includes all important features for normal development.								
		The Standard Install mode provides everything you get in the Lite Install with additional features for more advanced and in-depth debugging.								
		The Custom Install Mode gives you more control over what is installed and gives you various choices to customize your e ² studio product instal								
		A detailed list of what is installed in each mode is here:								
		Renesas e ² studio Features List								
Installer	All	🛃 Renesas e² studio 2023-07 Setup — 🗆 🗙								
		Renesas e ² studio 2023-07 Setup								
		Please select the e ¹ studio installation type. <u>Click here</u> for help selecting a type and to see what features are included. Select Install Type: Image: Click Install (Recommended) This installs e ¹ studio in Lite Mode. This mode offers a simplified experience focused on simple code editing & debugging with only important features Standard Install This mode offers all extended debugging functionality and other advanced features								
		Custom Install Custom installation of e ² studio This mode is allows you to select which features are installed								

e² studio 2023-07 Release Documentation

All

All

CDT

Eclipse

Documentation								Release Note			
CDT has b	een	update	ed to ^r	11.1	.1. See <u>C</u>	DT	11.1 New a	and	Notewo	orthy	
Eclipse Pla here: <u>Eclip</u>							Details can	be	found		
and Memo for the sele The feature Event Brea	ry vie ectior e is a ak".	ew than in the ivailat	it allov e view ble via	vs a ′. the	faster wa view pop-	y to up	egisters, Ex o create a h menu and	ard is n	ware ev amed ",	ventpo Add	
(x)= Vari	⁰ ⊚ E	Brea	Pr	ој	👾 Expr	×	e [®] Eve	2	Peri		o
					ł	5	->ta 🖃 🚽	1	₹ %	(
Expression Type			Value Address				Name : value Details:				
(×)= val		int		Select All				_	1+A	F	
🐈 Add nev			D			sions			l+C	Ŀ.	
						nes	510115		Cu	H+C	0
				26	Remove						ſ
				2 Mar	Remove	All					

	(x)= Vari 💁 Brea	Proj			🔒 Peri 📘 K
			£.	⇒ta 🚽	× 🗞 🚺 🗞
	Expression Type	V	alue	Address	Name : val Detail
	(×)= value int		Select All	0.00000044	Ctrl+A
			Copy Expres	sions	Ctrl+C
		ж	Remove		
		🖗 Remove All			
		_	Number For	mat	>
entpoints All		_	Add Expressi	ion Group	>
entpoints All			Find		Ctrl+F
		_	Show Details	As	>
		÷	Add Watch E	xpression	
		_	Disable		
		_	Enable		
			Edit Watch E	xpression	
		ଙ୍କ	Add Watchp	oint (C/C++)	
		<i>°</i> 0	Cast To Type		
		×[]	Display As A	rray	
		4	Enable Real-	time Refresh	
			Real-time Re	fresh	>
	Cg Add Event Break		Renesas Ever	ntpoints	>
		x+y ≡?	Watch		

Configuring event points from the Eventpoints view is not always easy.

The IO Registers view now provides the ability to create an event break on a selected register to the Eventpoints.

Some event settings will also be automatically configured based on the register's information.

All

IO Registers

IO Registers ×			- 🖓 🖓 🕀 🖽 🖻 🎜 🎓 🔛 🛅 🐚 🛃 🕴	
lame	Value (Hex)	Address	Description	
A MPU		0xe000ed90		
R NVIC		0xe000e100		
- 🚼 SCB		0xe000ed00		
> IIII CPUID	0x410fc241	0xe000ed00		
> IIII ICSR	0x00000000	0xe000ed04		
> VTOR	0x00000000	0xe000ed08		
> AIRCR	0xfa050000	0xe000ed0c		
> SCR	0x00000000	0xe000ed10	Serial Control Register (SCMR.SMIF = 0)	
> IIII CCR	0x00000200	0xe000ed14		
> 😭 Add to Selec	ted Registers	0xe000ed18		
> 🚖 Remove from	n Selected Registers	0xe000ed1c		
> E Collapse all	other groups	0xe000ed20		
>		0xe000ed24		
> 2 Refresh		0xe000ed28		
> 👌 Lock Refresh		0xe000ed2c		
🔉 🗄 🗄 Expand All G	roups	0xe000ed34		
> 🔚 Collapse All		0xe000ed38		
> Q Find		0xe000ed3c	Acceptance Filter Support Register	
>	stad Depisters	0xe000ed88		
56 <u>-</u>	ected Registers	0xe000e000		
Print Expand	ed Groups	0xe000e004		
> 🔚 Save		0xe000e008		
🛃 间 Сору		0xe000e010		
> Show Value ((Bin) column	0xe000e010		
> Show Access		0xe000e014		
> -		0xe000e018		
> Renesas Ever	ntpoints	Add Event Bre	ак	

While debugging/analyzing problems often it is needed to save the state of the I/O registers so they can be later be analyzed/differenced with another state.

It is now possible to select registers in the IO Registers window and copy to clipboard.

		Name		Value (Hex)	Address			
		✓ 🛃 BSC						
		> 1818 BERCLR		0x00	0x00081300			
		> 1919 BEREN		0x00	0x00081304			
		> 1919 BERSR1	🔶 Add	to Selected Registe	rc			
		> iiii BERSR2		-				
	> 1919 BUSPRI	00	Remove from Selected Registers Collapse all other groups					
	> iiii CS0MOD	E Coll						
		> iiii CS0WCR1	🎓 Refr	och.				
O Registers	All	> iiii CSOWCR2	· ·					
		> IIII CS1MOD	🔕 Loc	Lock Refresh				
		> IIII CS1WCR1	🕂 Exp	and All Groups				
		> IIII CS1WCR2	E Coll	Collapse All				
		> IIII CS2MOD						
		> 1889 CS2WCR1	S Find	1				
		> 1889 CS2WCR2	🏫 Mar	nage Selected Regist	ters			
		> IIII CS3MOD	🚍 Prin	t Expanded Groups				
		> IIII CS3WCR1	💾 Save	2				
		> IIII CS3WCR2			Ctrl + C			
		> 1818 CS4MOD	Сор					
		> 1889 CS4WCR1	Star Add	Trac Copy for Sele	ected Register			
		> 1000 CS4WCR2	Sho	w Value (Bin) colum	in			
		> 1111 CS5MOD						
		1010 CSSWCR1		w Access column				
		All Registers Selected	Registers					

IO Registers All

You can now save all IO register info to a text file. Output from this feature can be seen below:

1			======	======		
2	Module	Register	Address	Value	Access	Size
3		==============	======	======	======	==========
4	+BSC					
5						
6		BERCLR	0x00081300	00	RW	В
7		STSCLR	[0]	0		
8		BEREN	0x00081304	00	RW	В
9		TOEN	[1]	0		
10		IGAEN	[0]	0		
11		BERSR1	0x00081308	00	RW	В
12		MST	[6:4]	0		
13		TO	[1]	0		
14		IA	[0]	0		
15		BERSR2	0x0008130a	0000	RW	W
16		ADDR	[15:3]	0		
17		BUSPRI	0x00081310	0000	RW	W
18		BPEB	[13:12]	0		
19		BPFB	[11:10]	0		
20		BPHB	[9:8]	0		
21		BPGB	[7:6]	0		
22		BPIB	[5:4]	0		
23		BPRO	[3:2]	0		
24		BPRA	[1:0]	0		

There is an improvement on project generation for FreeRTOS (with IoT libraries).

The previous project generation is renamed to "FreeRTOS (with IoT libraries)(deprecated structure)".

The new "FreeRTOS (with IoT libraries)" uses FreeRTOS LTS for the project generation.

Application selection is also available when creating new "FreeRTOS (with IoT libraries)" project.

GCC for Renesas RX

Select toolchain, device & debug settings

RX	Toolchain Settings	
RA .	Language:	● C ○ C++
	Toolchain:	GCC for Renesas RX ~
	Toolchain Version:	8.3.0.202202 ~
		Manage Toolchains
	RTOS:	None
	RTOS Version:	None
		Azure RTOS
		FreeRTOS (kernel only)
	Davies Settings	FreeRTOS (with IoT libraries)
	Device Settings	FreeRTOS (with IoT libraries)(deprecated structure)
	Target Board: CK	-RX65N ~
		Download additional boards
	Target Device: R5F	-565NEHxFB

RTOS Configurator



Smart Configurator for RX updated to V2.18.0.

- BSP rev7.41 is supported and will be added as default BSP when creating Smart Configurator RX project.
- RX26T (RAM size 48K) devices have been supported in Smart Configurator
- GPT has been supported in Motor component for RX66T
- Sample project can be selected for creation for Smart Configurator RX project, there are two kinds of sample projects are available as below:

		8	
		New Renesas CC-RX Executable Project Description part	Ď
		Project template selection	
Smart Configurator	RX	? < <u>B</u> ack <u>Next</u> > <u>Finish</u>	Cancel

- The blinky project can be selectable when the selected boards contain LED pin information.
- Compare view has been supported for helping user resolving the user code merge conflict after generating codes for CG components. You can easily compare the code differences before and after, then resolve the conflict by a simple click or manual editing on the right panel.

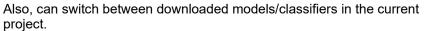
runtime-e2 - File Compare - e ² studio		- - - - - - - - - - -
File Edit Source Navigate Search Project Renesas Views Run	Els Window Hole Window Hole	(co)
		a 🗃 🖬 ale 🚱 🗤
		St Outline X
> Si test	© CCompare	There is no active editor that provides an outline.
> 🥹 testii	v Compare	mere is no active editor that provides an outline.
	## RConligADC Create	
	S Compare Viewer 1 H E 25 10 10 10 10 10 10 10 10 10 10 10 10 10	
	Existing code	
	SA AVR = 10; // class humb interrupt interrupt // class humb interrupt // class humb interrupt // class humb interrupt interrupt interrupt interrupt interrupt interrupt interrupt interrupt interrupt interru	
	🕫 Javadoc 🚯 Declaration 🖾 Console × 🐘 📓 🖗 🖻 🔍 🔍 💌 🗂 🗸 👘 🖸 🕼	G ≠ G ∰ & G % [©] □
	Same Comparate Opport	



		 RSCI peripheral function has been supported for RX26T in SCI/SCIF Asynchronous Mode, SCI/SCIF Clock Synchronous Mode, SPI Clock Synchronous Mode, SCI Smart Card Interface Mode and I2C Master Mode.
		The Reality AI features have been moved to a new top level menu item "Renesas AI".
		This is to aid usability and discoverability of these features. The menus are disabled until you have authenticated with the Reality AI website via the "Reality AI Authentication" menu:
Reality Al	RA, RX	File Edit Source Refactor Navigate Search Project Renesas Views Run Renesas Al Window Help
		📰 😵 🗝 🗞 👻 🔌 🕶 🚱 🖷 🚱 Reality Al Authentication
		Project Explorer × Project Explorer × Project Explorer × Project From Reality Al Tools® ↓ Link to Reality Al Tools® project
		There are no projects in your workspace. Sync to Reality AI Tools®
		Synergy C/C++ Project Download classifier from Reality AI Tools®
Reality Al	RA, RX	The Reality AI plugins are no longer included as default within the e ² studio product. These can be added when installing the product or added via the "Install New Software" feature when projects needing these plugins are detected. This separation allows us to update the Reality AI feature when the website is also changed.
		In the previous version of e ² studio it was possible to download the zip file package from the Reality AI website via the e ² studio user interface.
Reality AI	RA RY	After this point you needed to extract and integrate this with your project manually.
Reality Al	RA, RX	It is now possible for e ² studio to manage this operation with a new feature and user interface. You can manage multiple classifiers and decide which is to be integrated with the project. When added to the project the build settings are configured to match the classifier selected.



ecify directory to store a	-	ols® from Reality AI Too	ols® to download							
Store directory Use default directory										
Directory:									Brow	50
Directory.									brow	se.
Reality AI project: Sample	Project									
lassifiers:										
Deployed Name		Package Date			Data Typ	9		Target		-
test		Mar 22, 2023 06	:57:21 PM		float			RA6T2 (ARM Cortex-M3		3)
test		Mar 22, 2023 07	:27:06 PM		float			RA6T2 (ARM Cortex-M3		3)
test		Mar 24, 2023 10	:09:20 AM		float			RA6T2 (ARM Cortex-M		3)
Use available classifier	in the project									
Deployed Name	Package D	ate	Data Type	Targe	t	Active	Lo	cation		



elect available classifier in	the project to use						
Store directory							
Use default directory							
Directory:						Brow	se.
Reality AI project:							
Classifiers:							
Deployed Name	Package Da	ite	Data Typ)e	Target		
	· · · · · · · · · · · · · · · · · · ·						
⊻ Use available classifier	in the project						
Deployed Name	Package Date	Data Type	Target	Active	Location		
Deployed Name	Package Date Mar 22, 2023 07:27:06	PM float	RA6T2 (ARM	No	src/realityai		
Deployed Name	Package Date	PM float	-	No			
Deployed Name	Package Date Mar 22, 2023 07:27:06	PM float	RA6T2 (ARM	No	src/realityai		
	Package Date Mar 22, 2023 07:27:06	PM float	RA6T2 (ARM	No	src/realityai		
Deployed Name	Package Date Mar 22, 2023 07:27:06	PM float	RA6T2 (ARM	No	src/realityai		
Deployed Name	Package Date Mar 22, 2023 07:27:06	PM float	RA6T2 (ARM	No	src/realityai		

Smart Configurator updated to V1.7.

		Smart Comgurator updated to V1.7.
Smart Configurator	RL78	 RL78/G16 and RL78/G24 UM Rev1.0 catch-up. Support RL78/G24 TMKB3, DALI, TRD (Timer KB3 PWM Output Gate Mode) and A/D (Advanced A/D mode). Support new blinky project generation feature when selected the target board with LED resource in project generation wizard.

8				_		×
New Renesas C	C-RL Executable Project				_	\diamond
Choose a proje	ect template.					4
Project templa	te selection					
	Bare Metal - Minimal					
0 🔯	Bare metal project that inclue runtime environment.	des BSP. This pro	oject will initialize	clocks, pins, driver	s and the	С
	Bare Metal - Blinky					
•	Bare metal project that inclue clocks, pins, drivers and C ru			able. This project w	/ill initializ	e
?		< <u>B</u> ack	<u>N</u> ext >	<u>F</u> inish	Cancel	

Smart Configurator	RH850	Smart Configurator updated for RH850 to v1.9. User manual updated for RH850U2A and RH850/F1KM.
ARM J-link Debug Configuration	RA, RZ, DA, RE, Synergy	Improved reset behavior options available in the ARM J-link Debug Configuration
		"Reset Behavior" category is added to Debug Tool Settings tab to set the reset behavior for the debug models of the project.



		Name: ra_test Debug_Flat			
		📄 Main 🕸 Debugger 🕨 Startup 🔲 Common 🍕			
				_	
		Debug hardware: J-Link ARM V Target Dev	rice: R7FA6M3AH		
		GDB Settings Connection Settings Debug Tool Se	ttings		
		✓ Memory	^		
		Endian	Little Endian 🗸		
		→ Break			
		Use Flash Breakpoints	Yes		
		Allow Simulation	No		
		→ Flash			
		Flash Bus Type	×		
		Flash Memory Type	×		
		WorkRam Start			
		WorkRam End			
		Erase on-chip program flash before download			
		Erase on-chip data flash before download	No v		
		Use CFI-Flash	No		
		CFI Start	0x0		
		CFI End	0x0		
		✓ Semihosting			
		Semihosting breakpoint address			
		✓ RTOS			
		RTOS Integration in Debug View	No		
			No		
		✓ System			
		Allow caching of flash contents	Yes		
		✓ Time Measurement			
		Run Break Time Measurement	Yes		
		Count Every Core Cycle	Yes		
			•		
		Operating Frequency [MHz]			
		✓ Reset Behavior	Normal Reset 🗸 🗸		
		Behavior of reset command			
		PC after reset			
		Set T-bit on CPSR after reset	Not specify		
				4	
Developer Assist	RZ/T and RZ/N	When using The Flexible Software Package (FSP) for RZ/T and RZ/N, Developer Assistance support is now available within the Project Explorer view and Properties view.			
GDB	RZ, RA, DA, RE, Synergy	GDB for the RZ device family has been updated to revision 12. This now contains Python 3.10.			
The e ² studio Segger J-link ARM debug configuration now allows setup connection via a tunneling server.				I	
ARM J-link Debug Configuration	RA, RZ, DA, RE, Synergy	SEGGER J-Link support a remote debug system that allows a PC in one location to register J-Link units connected to it with a central server, making them available for use from a debugger running on another PC anywhere in the world.			
		More background information on this feature can be found at: J-Link Remote Server			



Debug Configurations			
Create, manage, and run configurat	ions		Ť.
🗋 🖻 🍋 🗎 🗶 🖻 🖌 🗖	Name: RA_test Debug_Flat		
type filter text	Main 🕸 Debugger 🕨 Startup 🧤 Source 🔲	Common	
C C/C++ Application C C/C++ Remote Application EASE Script		evice: R7FA2A1AB	
GDB Simulator Debugging (RH	V J-Link	settings	^
🚜 Launch Group	Type	IP	v î
✓ C Renesas GDB Hardware Debugg	J-Link Serial	(Auto)	
RA_test Debug_Flat	Settings File	\${workspace_loc:/\${ProjName}}/\${LaunchConfigName}.jlink	
💽 Renesas Simulator Debugging (Script File		
	Log File	\${workspace_loc:/\${ProjName}}/JLinkLog.log	
	Low Power Handling	No	~
	✓ IP Connection		
	Connection Method	IP via tunnel	~
	Host Name/IP Address[:port number]	IP via LAN	
	Identifier	IP via tunnel	
	Tunnel Server		
	Port		
	Password		
	✓ Interface		
	Туре	SWD	~
	Speed (kHz)	4000	~
	✓ JTAG Scan Chain		~
	KALING KAN D	ALL.	
Filter matched 9 of 11 items		Revert	Apply
0		Debug	Close

The Terminate and Disconnect buttons in the user interface have been improved. The Terminate button will stop the device.

The disconnect button will leave the device in the state defined in the debug configuration. This has been implemented for the Segger J-link debugger for ARM based devices.

The "Disconnection Mode" has options for No change, Stop and Continue.

Pressing the Disconnect button will perform the option set in the Disconnection Mode setting.

		 Debug Configurations Create, manage, and run configure (Main): Program does not exist 	ations		×
Debugger	RA, RZ, DA, RE, Synergy	Image: Second	Name: RAtest Debug_Flat	Inget Device: R7FA2A1AB Tool Settings No No Yes FFFFFFFFFFFFFFFFFFFFFFFFFF Yes 3 Core Stop No change Stop Continue	· · · · · · · · · · · · · · · · · · ·
		Filter matched 9 of 11 items		Revert	Apply Close

ARM E2

Emulator RA, RZ, DA, Debug RE, Synergy Configuration When using E2 Emulator debugging it is now possible to perform a hot plug connection to an already running target.



This is available for selection in the E2 (ARM) debug configuration settings dialog.

Debug Configurations			– 🗆 X
Create, manage, and run configurations			1
			2
🖸 🖻 🕪 🗮 🖻 🏹 🗸	Name: RA_E2 Debug_Flat		
type filter text	□ Main Sebugger ► Startup Source □ Common		
C/C++ Application C/C++ Remote Application EASE Script	Debug hardware: E2 (ARM) V Target Device: R7FA6M3	AH	
GDB Hardware Debugging	GDB Settings Connection Settings Debug Tool Settings		
GDB Simulator Debugging (RH850)	~ Clock		^
4 Launch Group	Main Clock Source	Internal	~
 Renesas GDB Hardware Debugging 	External Clock Input Frequency (MHz)	W.	
RA_E2 Debug_Flat	Permit Clock Source change on writing on-chip Flash Memory	/ tes	~
Renesas Simulator Debugging (RX, RL78)	Operating Frequency (MHz)		
	 Connection with Target Board 	(4)	
	Emulator	(Auto) ITAG	
	Type Speed (kHz)	Auto	×
		Auto	~
	Power Power Target From The Emulator (MAX 200mA)	Yes	~
		User Interface	
	Power Target via	3.3	
	Supply Voltage (V)	3.3	~
	~ Connection	v.	~
	Hold reset during connect	Yes	
	ID Code (Bytes)	FFFFFFFFFFFFFFFFFFFFFFFFFFF	
	Low Power Handling	Yes	~
	Hot Plug	No	~
	✓ TrustZone	No	~
	Set TrustZone secure/non-secure boundaries	NO	×
		16	~ ~
	SWO frequency division	16	v .
			Revert Apply
Filter matched 9 of 11 items			При
0			Debug Close

When using Segger J-link debugging it is now possible to perform a hot plug connection to an already running target.

This is available for selection in the J-link ARM debug configuration settings dialog.

		Debug Configurations			- 🗆 ×
ARM J-link	RA, RZ, DA, RE, Synergy	Create, manage, and run configura 8 [Main]: Program does not exist	tions		<u>S</u>
			Name: RATest Debug_Flat		
		type filter text	🎦 Main 🔅 Debugger ⊳ Startup 🔲 Common	💱 Source	
		C C/C++ Application C C/C++ Remote Application EASE Script	Debug hardware: J-Link ARM 💙 Target D		
Debug		GDB Hardware Debugging	GDB Settings Connection Settings Debug Tool S	ettings	
Configuration	rte, cynorgy	 Launch Group E Renesas GDB Hardware Debug RATest Debug_Flat 	Register initialization Reset on connection		Ţ. Î.
		Renesas Simulator Debugging (Reset before run ID Code (Bytes)	Yes FFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFF	<u>×</u>
			Hold reset during connect		~
			Reset before download	Yes	×
			Prevent Releasing the Reset of the CM3 Core Secure Vector Address	e tes	· · · · · · · · · · · · · · · · · · ·
			Non-secure Vector Address		
			Hot Plug Disconnection Mode	Yes Stop	Ŭ. I
			✓ SWV		
			Core clock (MHz)	0	~
		Filter matched 9 of 11 items			Revert Apply
		Ø			Debug Close
		DA device support DA14592/4.	for project import and	debugging adde	d for
		The DA14706 device is now also supported in e ² studio.			
		The SDK for this device can be imported using the File->Import->Dialog			
DA support	DA	SDK Project, Once imported the debug configuration will be migrated to			
		the Renesas GDB Hardware debugging configuration for Segger J-link.			
		This will allow RAM and Flash based debugging.			



From e² studio 2023-07, all projects in a Dialog SDK can be imported using the "Dialog SDK Project" importer.

Projects will be categorized into different types, and you can change the setting of each project type or each individual project.

		8	- 🗆 X
		Dialog SDK Project	
		Select toolchain and target device	
		type filter text	
		Project Toolchain Toolchain ✓ Application	in version Device
Dialog SDK		pxp_reporter (C:\Workspace\Dialog\DA GNU ARM Embedded 7.3.1.20	180622 DA14695
project	DA	uartboot (C:\Workspace\Dialog\DA146 GNU ARM Embedded 7.3.1.20	180622 DA14695
importer		✓ Host Application	
		cli_programmer (C:\Workspace\Dialog\I MinGW 8.1.0	Not required
		libprogrammer (C:\Workspace\Dialog\[MinGW 8.1.0	Not required
		✓ Utility	
		python_scripts (C:\Workspace\Dialog\D Not required Not req Project types settings Project types settings	uired Not required
		? < Back Next > Finish	Cancel
Host project build	DA	When using the Dialog SDK importer there are some prower which are for building on the host platform with minGW. Now these projects can be imported as part of the Dialog procedure. These can then be built using an integrated r in e ² studio.	g SDK Import



5. Useful workarounds and information for 2023-07

Please visit the Renesas FAQ for e² studio for the latest up to date information:

On	line	FAQ	link.

	0	
ID	Component	Workaround or information
	Application	When using the check for updates feature within e ² 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 e ² 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:
		e ² 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
🐔 🐐 🔳 株 Debug	✓ CCRX_54_Project HardwareDebu	g 🗸 🌞 🗄 🗖
🎦 Project Explorer 🐹	E 🕏 🗸 🗆 🗖	
> 🚰 CCRX_54_Project [Hardward		
	New	>
	Rename	F2
È	🔤 İmport	
2	Sa 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.

▶ 🔐 🔛 🛃 🖛 🖬 🕶	
	\sim
	_
Project Upgrade Required	-
Projects in this workspace require upgrading before they can b Click here to upgrade these projects.	uild.
Smart Browser Notification Startup	a

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

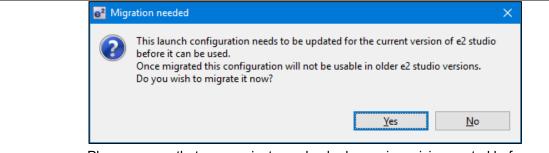
e ²		—		×
Upgrade Legacy e2 studio Projects				
8 You must select at least 1 project				
🔲 🖾 CCRX_54_Project [HardwareDebug]				
(?)	<u>F</u> inish		Cance	I

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, RL78 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 upgradedManagementor downgraded the imported project to the latest tools installed on the host
machine.

This no longer happens in the latest e² 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_Proj	ject
	type filter text	Settings
	 Resource Builders C/C++ Build Build Variables Environment 	Configuration: HardwareDebug [Active]
	Logging Settings Tool Chain Editor > C/C++ General Project References	 Tool Settings Toolchain Device Build Steps Build Artifa Current Toolchain Toolchain: Renesas CCRX Version: v2.06.00
	Run/Debug Settings	Change Toolchain Toolchain: Renesas CCRX Version: v2.06.00
	•	ain version does not exist and build is performed, then an layed, and the build will fail.
RZ Toolchain	e ² studio product but r In addition RZ within e	GNU ARM-NONE toolchain is still supported within the now using the gnuarmeclipse plugins. e ² studio now supports the GNU ARM Launchpad om https://launchpad.net/gcc-arm-embedded.
	One drawback of this builder provided in the toolchain. To use this	toolchain is that it does not have a standard library e same manner as the legacy KPIT ARM-NONE feature for ARM Launchpad and gain access to the more s a further download is required.
		led within the e ² studio installer or directly from here: as.com/rz/rz-download-toolchains/
	Once integrated it is p toolchain tab of the bu	oossible to integrate the library generator from the uild settings page.

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		e ² Properties for GCC_RZ
		type filter text Settings
		 > Resource Builders > C/C++ Build Build Variables
		Environment Logging Settings Tool Chain Editor > C/C++ General Project References Run/Debug Settings Change Toolchain: KPIT GNUARM-NONE-EABI Toolchain Version: v16.01 Change Toolchain Toolchain: KPIT GNUARM-NONE-EABI Toolchain Version: v16.01 Change Toolchain Toolchain: Correate Library generator Create Flash image
	QE compatibility	(libgen) is added to the available tool settings. If QE for TCP/IP V1.0.0 is used, please update it to V1.0.1. Other QE series can be used with e ² studio 6.0.
		What is QE? https://www.renesas.com/qe Details of QE for TCP/IP https://www.renesas.com/qe-tcpip
5954	Application	If you experience the error message "org.eclipse.swt.SWTError: No more handles" this can be caused by certain multi-monitor software and the Eclips framework.
		 If this error occurs there are 2 workarounds: Use a single monitor display. Uninstall the multiple monitor software from your graphics chipset vendor and revert to the standard Windows multi-monitor feature.
6981	RL78 Debugging	When debugging IAR C source file with an OCD emulator (E1), the Monitor program area (0x00002-0x00003) is used.
		Therefore, this area must be excluded from usable address space. Please add '-HFF' in the linker option. 1. Open Property.
		 Select [C/C++ build]-[Settings] at left side.
		 Select 'IAR RL78 Xlink linker' at right side, add '-HFF' at the textbox 'command'.
		Not doing this will cause problems with connection and download when using interrupts.
NA	Application	If you are experiencing slow building of projects within e ² studio there are so 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 th path variable it will find it more quickly. Especially important if there are network drives in the path.

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		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 <u>llvm-gcc-</u> 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.
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:



		e ² Preferences	- 0	×
		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// Indate 	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 all variants of specific headers: Index source and header files opened in editor Allow heuristic resolution of includes Skip files larger than: 8 MB Skip included files larger than: 8 MB Skip included files larger than: 8 MB Skip all references (Call Hierarchy and Search will not work) Skip type and macro references (Search for these references will not work) ch red-framed variables, then rebuild project or relevance.	
2728	GDB	index.	ys work when using the CC-RX 1.02.01 toolchain.	
NA	Eventpoints	If eventpoints do not alw "Apply to Target" toolba to the target manually.	correctly you will need to use CC-RX 2.00.00 or th the debug information is corrected in this releas ways work just after they are set, you can use the in button in the Eventpoint view to send the Eventp This will always ensure the debugger target has a lates before execution starts.	oints
5772	IAR Plugins	The IAR Plugin Manage RL78, RH850 and RZ (er is included in e² studio and provides support for ARM).	RX,
		•	allation and configuration of IAR toolchain plugins. Help -> IAR Embedded Workbench plugin manag	
6184	RL78/CC-RL debugging	When the load module E1, please specify the f	for RL78/G10 which created at CC-RL is debugge ollowing option:	d in
7217	Application	The restore default sett	Set enable/disable on-chip debug by link option ings does not restore all the options set during pro sets the defaults to the base settings for the device	
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 device and the	RAM
		To continue the debugg	ing, disconnect and connect the debugger again.	
	Use spaces as tabs		have settings for use spaces as tabs. The option o e conflicts with the CDT formatter settings.	n the
		To change the use space		

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Release Note

4g 12		ezkopints III) Registers 🛋 Modules 🕜 Expressions 📲 Eventpoints 📰 10 Registers 🕴 🦄 🖂
Preferences	Profile 'K&R (built-in)'	
Core : Acquerator Acque	Configure Point C	Epot
Language Magong Intro C.S. 2019 (Strate C.S. 2019) (Strate C.S. 201	tå øbler) const i Ø Continuous entiden tri bjekki: "prestends" januaris Ø Bateneous within block i Ø Bateneous within index i sel Ø bateneous within index i sel Ø bateneous within index i sel Ø bateneous within i sel Ø bateneous withi sel Ø bateneous within i sel Ø bat	<pre>) double distance(const Foint& ether) const; int compard(const Foint& ether) const; double s;) foint foint istance(const Foint& ather) const { double sd(+ y - a there s; double de + y - a there s; double de + y - a there s; return sqrt(dx * dx + dy * dy); int Reder::compard(const Foint& ather) const { int Reder::compard(const Foint& ather) const { int Reder::compard(const Foint& ather) const {</pre>
a (Ø	<u>o</u>) check (f)) check (f)

	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 Projects	When debugging the RH850 object built with the Green Hills compiler in e^2 studio, specify the following option for the compiler option: -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



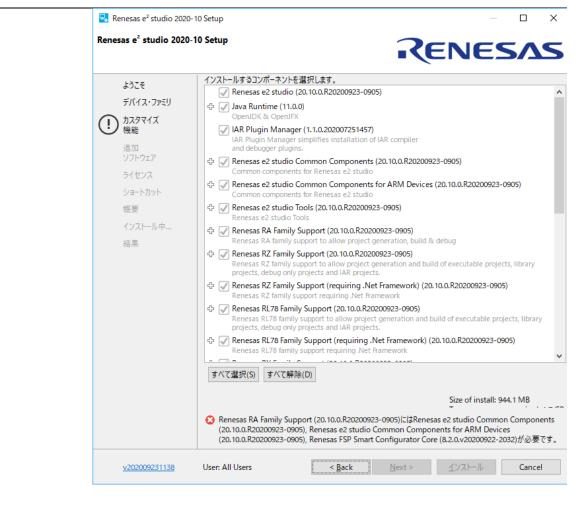
	RZ GCC Build	In the latest e ² studio, the RZ import functionality has been improved. However, there are still possibilities of older projects causing problems when imported into e ² studio.
		In older versions of the RZ build plugins the FPU option was not being handled correctly. When setting the "Soft" Floating point ABI the command line was still receiving <code>-mfpu=vfpv3</code> 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 & RL78 Debugging	In previous releases there were some problems with stepping in some situations when using the CCRX and CCRL toolchains.
		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.
	Code Generator	When using multiple installations of e ² studio on your machine you may find that subsequent installations do not work correctly with the code generator.
	registration	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.v201 80601-1047\CodeGenerator\Tools\register COM.bat

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":
		<pre>place in FLASH_region { block LOCK_LOOKUP,</pre>
		ro, ro section .rodata, block QSPI_NON_RETENTIVE_INIT_BLOCK, block RAM_INIT_CODE, block USB DEV DESC BLK };
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.
		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 Configurator	When creating a project of RZ / A2M, the following Warning is displayed in the Problems view for the src / renesas / configuration folder.
	-	"Invalid project path: Include path not found"
		[Workaround]
		Delete the specification of this folder with the compile option include path setting.
24883	R2/A2M	RZ / A2M project generated by e^2 studio does not support GCC ARM 7.x or later. Please use GCC ARM 6.3.
27913	GDB server RL78	When debugging with an EZ cube, real-time refresh significantly slows down debugging features and it makes e ² studio look like suspended.
12123	Linker Script Editor	The Linker Script Editor may report errors when using some Wild Identifiers such as 1file.o and *filename.o.
		Although these are valid file names and valid identifiers according to the Linker Script syntax, they need to be quoted when using the Linker Script Editor.
		(e.g. "1file.o" and "*filename.o").
	RZ/G Linux Platform Tools	When using RZ/G Linux Platform Tools, gnu.io.rxtx plug-ins should be installed same as Nebula plug-ins.
		Please follow the below steps to install gnu.io.rxtx plug-ins.
		Start the e ² studio and select [Help] -> [Install New Software] from the menu bar to open the [Install] dialog box.
		Click on the [Add] button, enter "GNU RXTX Plugin Update Site" as a name and "http://rxtx.qbang.org/eclipse/" as a location, and click on the [OK] button.
		Select [RXTX 2.1-7r4] -> [RXTX End-User Runtime] from the list, click on the [Next] button, confirm the license, and install the plug-ins.



32564	MyRenesas	Due to differences in the login data between 7.8 and the 2020-04 e^2 studio (or later) version the FreeRTOS download feature does not work in 7.7/8 if the user has logged into MyRenesas or changed their login data details using 2020-04. If you previously used 7.7/8 prior to using 2020-04 and have not changed your login details, then both versions will work correctly.	
		If you need to use MyRenesas in older versions of e ² studio after logging in using 2020-04 then you will need to close all e ² studio instances and delete the file "%USERPROFILE%\.eclipse\org.eclipse.equinox.security\secure_storage". Be aware that doing this will remove stored passwords for any Eclipse-based application.	
32543	QE	When updating e ² studio versions using an installer any installed QE tools are removed and then must be reinstalled. To preserve QE tools during an update use the "Check for Updates" function in the "Help" menu to perform an in-place online update.	
30613	RH850	When viewing flash memory in the Memory View, it can be confusing as the values for this memory type can be random for unwritten blank flash memory regions.	
		This can then result in many false positives for memory changes, resulting in more memory changes than expected. (red text)	
		To fix this the debugger supports detection and filling of blank addresses areas with a user specified hex byte value.	
		There is currently no user interface support for this feature. So, you need to add the following command parameters to the additional commands section of the debug configuration. The GDB command line option is: - uBlankFlaskFill=BB with the blank fill value being 0xBB. Specifying this value enables the feature, by default it is off.	
37443	RA (Linux)	CMSIS Pack Import feature does not work for RA on Linux	
36999	RA	Deleting the Debug folder from an NS project causes build failure when reference NSC guard functions.	
36007	RA	When debugging a secure and non-secure project - the Non-secure callable functions do not have debug information. This means you cannot set breakpoints in the secure function.	
35767	RA, RZ (Linux)	When importing an image using the "Image" Rendering on Linux Host the action fails. If you need to import an image on Linux please use the Raw Image memory rendering instead.	
38324	RA	 When upgrading an e² studio 2020-04 or 2020-07 containing RA Family support to 2020-10 or later using the installer you may encounter on the features page. To avoid this, you either need to re-select RA on the Device Family selection page or uncheck and check again "Renesas FSP Smart Configuration Core" on the Features page. 	





IDE- 39932	RX	The Renesas ITRON debug views is only supported with e ² studio 32bit version such as 7.8.0 currently. Enabling the Renesas ITRON debug views on e ² studio 64bit version is under planning.
IDE- 42025	RL78	After conversion of legacy GCC projects to LLVM, the generated linker_script and start.S files should be moved to src folder. "generate" folder needs to be deleted and the path to the linker script from Settings-> Linker-> Linkerscript should be change to "\${ProjDirPath}/src/linker_script.ld"
	RA	When migrating from FSP versions before 3.0 the way pin configuration files are handled has changed. Previously the projects maintained ".pincfg" files within the project directory which contained the pin data. When migrating to FSP 3.0 and the subsequently saving the migrated configuration.xml the pin data is migrated from these files to the configuration.xml file. The ".pincfg" files will still appear in the pin tab until they are subsequently removed.
IDE- 44277	All	From e ² studio 2021-07 the RTOS debugging integration has been switched off by default due to some debug stability problems. This feature can be unstable with some RA projects. If you wish to switch this back as it may work for you, you can do so from the debug configuration settings pages. This can be accessed via the Run->Debug Configurations menu item or via the project context menu Debug As->Debug Configurations.

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IDE-43524 Symbols of inline assembler instruction could not be resolved on C/CPP standard language. They can be resolved on Renesas C/CPP Language Extend. +Renesas C/CPP Language Extends are added in Language Mappings of new project on e² studio v2021-07. +Renesas C/CPP Language Extends need to be added manually, if old project is imported to e² studio v2021-07.

pe filter text		Language Mappings			🔶 🕶 🖒	Ŧ
Resource	^					
Builders		These settings are project	specific. The mappings listed	l here override <u>workspace-wide</u> language n	nappings.	
C/C++ Build		Configuration	Content Type	Language	Add	1
C/C++ General		(All)	C Header File	Renesas_C_Language_Extend		
> Code Analysis Documentation		(All)	C Source File	Renesas_C_Language_Extend	Remove	
File Types		(AII)	C++ Header File	Renesas_CPP_Language_Extend		
File types Formatter		(AII)	C++ Source File	Renesas_CPP_Language_Extend		
Indexer					-	
Language Mappings				i i i i i i i i i i i i i i i i i i i		
MISRA-C In-editor Chec		Language settings inherit	ed from the workspace			
Paths and Symbols		Content Type		Language		1
Preprocessor Include Pa						
Project Natures	~]
>						

IDE- 43405	RA, Synergy	Microsoft have updated and improved the TraceX tool which can now be downloaded from the Microsoft Store. If you are using a new version of TraceX when configuring the tool, ensure you have checked the "Use TraceX installed from Microsoft Store" option. If you are using an older version, then uncheck this box. The configuration dialog is available in the preferences dialog. (Window->Preferences) (Renesas->TraceX category)
IDE- 34814	RL78, RX	The CCRX and CCRL build components now support multiple output formats for Converter tool instead of one format as previous version. If you migrate an old project to the new e ² studio and then return to the old e ² studio with the old output format. You will need to modify the settings as desired.
IDE- 43454	RA, RZ	
		The Linux installer for e ² studio cannot be run as root by default, including using "sudo". If you wish to run it as root, then you need to add "appimage- extract-and-run" as the 1st argument. e.g., "sudo ./e2studio_installer-2021- 07.AppImageappimage-extract-and-run"
IDE- 47790	RH850	Synchronous mode is supported in e ² studio 2022-01 for debugging RH850 multi-core devices. There is no need to manually switch between synchronous mode and asynchronous mode, and the mode automatically switches to the optimum mode depending on the debug operation.
		Basic specifications for mode switching: When all cores are stopped and [Resume All], the operation mode becomes synchronous mode. Resume for one core switches to asynchronous mode and continues in asynchronous mode until all cores have stopped. Always use sync mode under the following conditions: * In that case, the operation of the [Resume] button will be the same as the operation of the [Resume All] button.



	-Software breakpoint has been set. -Connected with a hot plugin connection.			
	-Connected with a Initial Stop State debugging enabled.			
	Synchronous mode specifications: -The [Resume All] button executes all cores. -When a core is suspended due to a breakpoint or the [Suspend] button, all cores are suspend. -For the [Step Into] button, all cores will step in. -For the [Step Over] button, all cores will be executed. Then, when the			
	currently active core completes the step over execution, all cores will be suspend. -For the [Step Return] button, all cores will be executed. Then, when the currently active core completes the step return execution, all cores will be suspend.			
	Asynchronous mode specifications: -[Resume] button executes the currently active core. -Suspend on one core due to a breakpoint or the [Suspend] button does no affect the behavior of the other cores. -Unable to set software breakpoints.			
	Specifications of each button related to execution control: [Resume] button: Switch to asynchronous mode and run the core currently being debugged. [Suspend] button: In asynchronous mode, stop the core currently being			
	debugged. In synchronous mode, stop all cores. [Resume all] button: Switch to synchronous mode and run all cores. [Suspend all] button: Stop all cores and switch to synchronous mode.			
	Limitations: -When use Step Into in synchronous mode, cores that are not debugged are also stepped, but the execution addresses of those cores are not reflected in the debug view. Check the register view for the correct PC value.			
IDE- RX 48013	The following BSP packages have been removed from the RX Smart Configurator:			
	• r_bsp_gcc_v1.00.zip			
	• r_bsp_gcc_v1.10.zip			
	• r_bsp_gcc_v1.20.zip			
	• r_bsp_gcc_v1.30.zip			
	• r_bsp_iar_v1.00.zip			
	• r_bsp_iar_v1.10.zip			
	• r_bsp_iar_v1.20.zip			
	• r_bsp_user_v1.10.zip			
	• r_bsp_user_v1.20.zip			
	• r_bsp_user_v1.30.zip			
	• r_bsp_v3.80.zip			
	• r_bsp_v3.91.zip			
	• r_bsp_v4.00.zip			

IDE- 59034	Synergy Configurator	The Synergy Package view will need to be opened manually from version 2023-01 onwards, as it is not opened by default (since Synergy now uses a different Pin Configurator than in earlier e ² studio versions). The Synergy Package view is named "Synergy Package (experimental)".
1DE- 55553	RL/8 GUU	The RL78 GCC toolchain has been deprecated in favor of the RL78 LLVM toolchain. This toolchain offers much better performance and is recommended for new projects.
IDE-	RL78 GCC	This change should be automatically picked up when the project content is generated from the FSP Smart Configurator tool. This should ensure that existing projects continue to work as expected. When using the IAR toolchain for your project this new behavior can cause issues. In this case the IAR linker uses the "memory_regions.icf" file available in the script folder rather than the script file generated in the build configurations folder. To work around this please delete the file present in the script folder, then the tool will use the file in the build configuration folder.
	FSP Smart Configurator	When using the FSP Smart Configurator the linker script is now generated in the build configuration folder rather than the script folder.
		If copying a project with its build output directory between Windows & Linux, or moving it to a new location, you need to do a clean and rebuild to avoid build errors. If storing a project under version control avoid including the build output directories. At a minimum exclude the *.d files which may contain system specific paths.
IDE- 46896	GCC Plugins	To continue using the above listed BSP packages, please use the download function in Smart Configurator to download the exact version. Projects imported from Windows fail when being built in Linux.
		 r_bsp_v5.62.zip r_bsp_v5.63.zip r_bsp_v5.64.zip
		 r_bsp_v5.50.zip r_bsp_v5.61.zip
		• r_bsp_v5.40.zip
		 r_bsp_v5.20.zip r_bsp_v5.21.zip
		• r_bsp_v4.01.zip

	Synergy Configurator	Renesas Synergy no longer supports Synergy Software Platform (SSP) version 1.x.
		Only Synergy Software Platform (SSP) version 2.0 and later will be available for new Synergy projects. Existing Synergy 1.x projects will prompt to upgrade upon opening them in the Synergy Configurator, if a later version (2.0 or later) is available. This means that it is no longer possible to build SSP 1.x projects in e ² studio 2023-01.
	Synergy Configurator	The Pin Editor component for Renesas Synergy projects has been modified to use the same pin configurator as the RA device family. Any existing projects that were using the Synergy Pin Editor will have their projects automatically upgraded upon opening them in the Renesas Synergy Configurator. This will allow Synergy users to access the more advanced feature set of the RA pin configurator and enjoy an updated user experience.
IDE- 62045	GreenHills	Plugins for GHS Multi are no longer installed with e ² studio. Please see the GHS Multi manual for instructions on how to install the plugins if you want to use them.
IDE- 61688	Application	Toolbar buttons with functions that are accessible via a menu item have been hidden by default for new workspaces. You can add them back via Windows -> Perspective -> Customize Perspective This change will not impact perspectives in existing workspaces unless the perspective is reset.
IDE- 56105	FAA RL78 support	For RL78 FAA LLVM project, FAA source level debug is not available. Please use Disassembly view for FAA debugging.



6. Linux version

6.1 How to install

For information on how to install the Linux product please refer to FAQ below.

English : <u>https://en-support.renesas.com/knowledgeBase/19934358</u> Japanese : <u>https://ja-support.renesas.com/knowledgeBase/19934356</u>

6.2 How to run

- A. Run 'terminal' application of Linux.
- B. Move installed directory and Run 'e² studio' binary file.

6.3 Register toolchain to e² studio

6.3.1 GNU ARM Embedded

Install the GNU ARM Embedded toolchain to a shared folder as follows:

sudo mkdir -p /opt

cd /opt

sudo tar jxf ~/Downloads/gcc-arm-none-eabi-7-2018-q2-update-linux.tar.bz2

(assuming the toolchain has been downloaded to your Downloads folder)

On first invocation you will be prompted to specify a workspace location, you will also be advised that there are no new toolchains available for integration. Open the Renesas Toolchain Management preference page using the Help \rightarrow Add Renesas Toolchains menu item, then click on the Add... button and navigate to the root folder of the GNU ARM Embedded toolchain installation at /opt/gcc-arm-none-eabi-7-2018-q2-update in order to register the toolchain with e² studio:

Preferences 💿 😣				
type filter text	Renesas Toolchain Management	$(\neg \bullet) \bullet \bullet \bullet \bullet \bullet$		
Renesas Toolchair Smart Browser Smart Demo Smart Demo Smart Manual Support Folders Synergy Configura Synergy License Tracealyzer TraceX Task Tags Template Default Va Help Install/Update Java Library Hover LinkerScript	Toolchain Type CCC ARM Embedded T.3.1.20180622 KPIT GNUARM-NONE-EABI Toolch CLinaro 64bit Renesas CCRX Linaro GCCC for Renesas RX KPIT GNURX-ELF Toolchain	Installation Path /opt/gcc-arm-none-eabi-7-2018-q2-update/ a		
 MCU Oomph ⑦ ◉ 	Scan	Add Remove Cancel Apply and Close		



6.3.2 Linaro

- A. Download and extract a toolchain package file to arbitrary directory.
- B. Run 'e² studio' and select 'Help Add Renesas Toolchains'
- C. Select 'Toolchain Type' and 'Add' Location of toolchain.

Preferences 💿 😣					
type filter text	Renesas Toolcha	ain Management	⟨¬ ¬ ¬	• •	
Renesas Toolchair Task Tags Template Default Va Help	Toolchain Type GCC ARM En KPIT GNUAR Linaro				
 Java LinkerScript MCU 	LinkerScript Scan Add Remove				
Add New Toolchain Integrate a new toolchain which is not already re Found: Linaro - 7.3.1.20180425 Location: //home/softg//linaro7.2			Image: Size Name arm-linux-gnueabil/f bin gcc-linaro-7.3.1-2018.05-x86_64_ar include bin	Q OK Modified 13 6月 13 6月 13 6月 13 6月 13 6月 13 6月	
0	Cancel OK	efi	 libexec share gcc-linare-7.3.1-2018.05-linux-mani 11.3 kB 	13 6月 13 6月 13 6月	

Figure 2. Register Toolchain: Browse toolchain location

D. Click checkbox of added toolchain and restart e² studio.

Preferences 💿 😣				
type filter text	Renesas Toolchain Man	agement $(\neg \neq \triangleleft) \neq \checkmark$		
Renesas Toolchair	Toolchain Type	Installation Path		
Task Tags Template Default Va	GCC ARM Embeddec KPIT GNUARM-NONI			
 Help Install/Update Java 	T.3 1.20180425	/home/softgi/linaro7.2/		
LinkerScriptMCU		Scan Add Remove		
? (Cancel Apply and Close		

Figure 3. Register Toolchain: ex) Linaro

6.4 How to build and debug RA applications Overview

6.4.1 Build

Open the New project wizard and choose an RA project.

If this is unavailable it is likely the FSP has not been installed correctly. In this case, quit e² studio, reinstall the pack(s) and restart e² studio again.

Once the wizard completes a sample project will have been created, as well as a debug configuration for connecting the debugger.

6.4.2 Debug

Once the project has successfully built and produced a build artefact for debug, open the Debug Configurations dialog and a browse to the Renesas Hardware Debug section.

The debug configuration will match the project name – check that the settings are correct and hit Debug to connect to the device.

Checks if connection fails.

If the debug connection fails, it is often for one of two reasons:

- 1. If using a virtual machine, make sure that the device is tied into the VM rather than the host machine.
- 2. If the Segger library has not installed as part of the FSP correctly open the "/home/user/.eclipse/com.renesas.platform_XXXXXX/DebugComp/RA/ARM/Segger" folder and copy and paste the 'libjlinkarm.so' into the other Segger folders - e.g. 'Segger_v6.50.1'. Alternatively, take the latest file from the Segger Tools installation folder and install it in the same place.



6.5 How to build and debug RZ Linux application Overview

e² studio for Linux supports building and debugging Linux applications for devices of RZ/A Group and RZ/G Group. For debugging by GDB (the GNU Project Debugger), please add Linux programs gdb-server program to Linux file system of devices and run as background process automatically. (ssh-server, tcf-agent will be needed for connection between host system and target device.) For detail about building Linux image for RZ family devices, refer to embedded Linux wiki pages (<u>https://elinux.org</u>) or Renesas Rulz web pages about RZ family (<u>https://community.renesas.com/</u>). Descriptions in below is based on RZ/A1H case.

6.5.1 How to add gdb-server to RZ/A Linux root file system

- A. Build root file system of RZ/A1 Linux-4.9 BSP. (path example: ~/rza_linux-4.9_bsp/, command example: ./build.sh buildroot)
- B. Move to 'buildroot-***' directory in 'output'. (path example : ~/rza_linux-4.9_bsp/output/buildroot-2017.02)
- C. Run menuconfig (make menuconfig) and add gdb-server. (Select 'Toolchain-Copy gdb server to the Target' menu)

softgi@softgi-dynabook-RZ83-VB: ~/RZA_linux_4_9/rza_linux-4.9_bsp/output/buildroot-2017.02 🛛 😑 🐵
File Edit View Search Terminal Help
/home/softgi/RZA_linux_4_9/rza_linux-4.9_bsp/output/buildroot-2017.02/.config - Buildroot 2017.02.10-g2e1365e Configuration
> Toolchain
Arrow keys navigate the menu. <enter> selects submenus> (or empty submenus). Highlighted letters are hotkeys. Pressing <y> selects a feature, while <n> excludes a feature. Press <esc><esc> to exit, <? > for Help, for Search. Legend: [*] feature is selected [] feature is excluded</esc></esc></n></y></enter>
Toolchain type (External toolchain)> *** Toolchain External Options *** Toolchain (Linaro ARM 2017.08)> Toolchain origin (Toolchain to be downloaded and installed)>
<pre>[*] Copy gdb server to the Target *** Host GDB Options *** *** Toost Chain Generic Options ***</pre>
[] Copy gconv libraries [*] Enable MMU support () Target Optimizations () Target Linker options
[] Register toolchain within Eclipse Buildroot plug-in
<pre><select> < Exit > < Help > < Save > < Load ></select></pre>

Figure 4. Menuconfig: set 'copy gdb server to the target'

- D. Move to 'target' directory in 'output' of 'buildroot-****'. (path example: ~/rza_linux-4.9_bsp/output/buildroot-2017.02/output/target)
- E. Add new file with a line as command at '/etc/init.d' directory

```
File name: S51gdbserver
Command: /usr/bin/gdbserver --multi --remote-debug /dev/ttySC0
```

F. Delete or disable below contents from etc/inittab.

Put a getty on the serial port

ttySC0::respawn:/sbin/getty -L ttySC0 115200 vt100 # GENERIC_SERIAL

G. Move 'Linux-4.9 BSP root' (path example: ~/rza_linux-4.9_bsp/) and build root file system again. Download root file system at target device.



6.5.2 Linux C/C++ Project generation and build

- A. Connect target device which is run as Linux, via Serial port.
- B. Select 'File New RZ Linux C/C++ project' menu and make new RZ/A1H Linux C/C++ project. In phase of 'RZ Linux connection settings', the serial port which is used for connecting target device, will be selected automatically.

	RZ Linux Project	8	RZ Linux Project	0 😣
RZ Linux toolchain an Select target device, to	nd project selection	2	RZ Linux connection settings Select connection details	Ď
RZ Linux Target Device	RZ/A1H (R7S721000)	•	Connections	
Toolchains	Linaro	•	☑ Use Serial Port: //dev/ttyA ud rate: 115200	
Toolchain Version	7.3.1.20180425	•	/dev/ttyACM0	
Project templates		1	Network: 172.22.162.222	w connection
RZ/A1H Hello Wor Test Project for RZ/A1			Open Network Connections	
?	< Back Next > Cancel Finish		? < Back Next > Cancel	Finish

Figure 5. New RZ Linux project & connection setting: Serial port

3 C. After editing codes, build by selecting 'Build Project' in right-click menu or push button. workspace - RZA_Linux_App/src/Hello.cpp - e² studio 🐔 🔅 🔳 🎋 Debug V 🖸 RZA_Linux_App_rza 🕠 🕅 🛃 🖛 📃 🔌 👡 🖛 🍋 [= 🔄 ▽ 🗆 🗖] 눰 Project Explorer 🛿 🖻 Hello.cpp 🛙 68 69 } else 🖻 RZA system("echo 0 > /sys/devices/leds.1/leds/led3/brightnes New 🕨 🖑 Binarie } 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 Go Into 🕨 🗊 Include result = function03(arg); 🕨 🗁 Debug Show In 🕶 🗁 SFC return result; <u>С</u>ору 🕨 🖻 Hello } RZA L iii × ⊖int function03(int arg) Delete unsigned long result = 0; call03++; std::cout << "function03:" << call03 << std::endl; if (call03%20 > 10) { system("echo 255 > /sys/devices/leds.1/leds/led4/brightr } else { system("echo 0 > /sys/devices/leds.1/leds/led4/brightnes } 🔮 Re<u>f</u>resh result = function04(arg); Close Project return result: Close Unrelated Projects 92 93 94 } int function04(int arg) Index 95 Figure 6. Build Project



6.5.3 GDB debug by using serial port communication

- A. Terminate all processes use serial port communication such as Minicom.
- B. Open 'Configuration' and check 'Serial' is selected as 'Connection'.

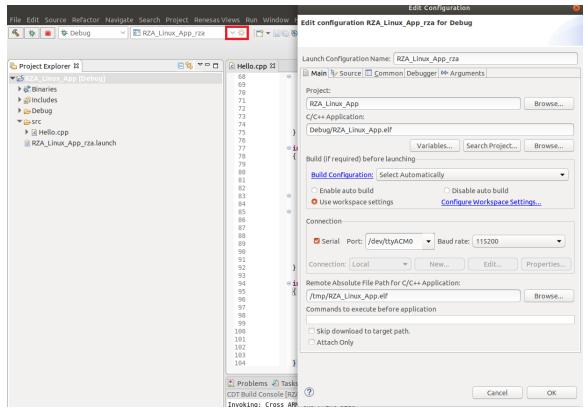


Figure 7. Connection configuration: Serial

C. Run debug by push button in takes 10 or more seconds for transferring binary files to target device. Pop up message for switching to debug perspective will be shown after transferring binary files.

File Edit Source Refactor Navioate Search Project	workspace - RZA_Linux_App/src/Hello.cpp - e² studio
File Edit Source Refactor Navigate Search Project	nesasViews Run Window Help Image: Second
Ter_trior_ryp_recould(t)	78 79 79 79 79 79 79 79 79 70 70 71 71 72 73 74 75 76<

Figure 8. Debug: Perspective Switch

D. 'Debug Perspective' provide ways for flow controls and configurations.

<pre> # Thread #1 497 [core: 0] (Suspended: Breakpoint) # anin() at Hello.cpp 33 0x107dc # Hello.cpp 33 # Hello.cpp 34 # Hello</pre>	ers 🛋 Modules % Expre	eakpoints 🕮 Registers 🛋 I	(x)= Variables 🖾 💁 Br	🍇 i> 🍫 🔻 🗖					bug 🛿
							esas Linux Application]	pp_rza	ZA_Linux_A
Emain() at Helio.cpp 33 arm-linux-gnueabihf-gdb (7.8.2) Helio.cpp 33 25 00010750 26 00010750 27 00010750 27 00010750 29 0010750 20 0010000 20 0000000 20 000000000 20 000000000	Value								
# arm-linux-gnueabihf-gdb (7.8.2) Hello.cpp 13 25 00010750 26 00010750 27 00010750 28 00010752 30 00010752 31 00010772 31 00010772 31 00010772 32 00010765 33 00010765 33 00010765 34 00010764 35 00010764 36 00010764 37 33 38 00010764 37 33 38 00010764 39 0001076 30 0001076 31 0001079 32 00010765 33 00010764 5 00010764 7 0001076 7 0001076 7 0001076 7 0001076 7 0001076 7 0001076 7 001076 7 001076 7 001076 7 001076 7 001076 7 001076 7 001076	long 1	unsigned long	⇔⊧tmp						
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Add Breakpoint Add Dynamic Printf Enable Breakpoint Defails:1 Defailt:1									
Add Dynamic Printf Name : tmp Enable Breakpoint Details:1 Default:1 Default:1	E) 📀 Performance Analys	mption (QE) 📀 P				5			
Accognanter interaction petails:1 Enable Breakpoint Defailt:1						Name · tmp			
Breakpoint Properties Decimal:1 Breakpoint Types Hex:0x1						Decimal:1			
						Binary:1			
Switch Default e2 studio Breakpoint type to Software 0 0 cta1:01						Binary:1	Breakpoint type to Softw		

Figure 9. Debug: Control buttons, views, setting break point

7. Open Issues in 2023-07

Open issues in the e² studio 2023-07 product will be kept up to date <u>here</u>:

Please visit to see the latest open issue list.



8. Appendix

8.1 Website and Support

Renesas Electronics Website

http://www.renesas.com/

Inquiries

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

8.2 Web Access and Privacy Policy

Collection of User Information Applications included in this package may access the Renesas Web site. In such cases, the following information is collected and recorded to Renesas server as a log.

• Date and time of access

• Access to URLs and files

• The unique certificate number linked to your account for MyRenesas (only when you log in to MyRenesas)

• The unique identification number linked to cookies for the Web browser (for cookies, refer to the privacy policy page stated below).

Logs are managed based on our privacy policy.

Refer to our privacy policy on the following Web page.

Privacy Policy:

https://www.renesas.com/privacy.html



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