The Free Version of RFD support only following FAQ. (excluding question for microcomputer specifications)
If need more support, please purchase paid version (Full Package).

No.	Category	Question(E)	Answer(E)	Relation API
1	About RFD	What is the poricy regarding warranty and support for RFD?	- Free Package We have performed a simple operation check, but this software is not guaranteed. There is no support other than this FAQ sheet. Please understand. - Paid Package (Full Package) All tests have been performed and operation is guaranteed. However, when using it by incorporating it into the application, the customer is responsible for checking the operation and testing on the application.	-
2	About RFD	What can RFD do?	RFD can erase and program to internal Flash. The only units that can be controlled at a time are the control units supported by the device. Addition, RFD don't support read function.	-
3	About RFD	Does the RFD integreated OSS?	No, RFD don't integrated OSS.	-
4	About RFD	Is there a limit to the location of the RFD?	For the naming section of ****_RAM_NO_BGO, if the BGO condition not be met, it must be placed on RAM. For more information about BGO, please see device UM.	-
5	About RFD	What is the should I do if want to use a other than GHS or Renesas compiler?	If you edit the r_rfd_memmap.h, r_rfd_compiler.h for a specific compiler, you will be able to compile it with other than GHS/Renesas compiler. However, please consider it to the reference because it does not take confirmation with us. The paid version (Full Package) is guaranteed to work only with GHS/Renesas compilers.	-
6	About RFD	What are Common component/Code Flash component/Data Flash component?	RFD has Data Flash component for operate Data Flash, Code Flash component for operate Code Flash and Hardware Property Area, and Common component for common operation. If program/erase to only Data Flash, integrate Data Flash component and Common component. If program/erase to Code Flash and/or Hardware Property Area, integrate Code Flash component and Common component. If program/erase to both, integrate Data Flash component, Code Flash component and Common component.	-
7	About RFD	What is the way to integration only Data Flash component and Common component for program/erase to only Data Flash?	R_RFD_CONTROL_TARGET_CODEFLASH set to R_RFD_DISABLE on r_rfd_config.h, and avoid compile following file for Code Flash component.(If don't avoid, occur warning) .¥source¥cf¥r_rfd_cf_api.c .¥source¥cf¥r_rfd_cf_definition.c .¥source¥include¥r_rfd_cf_local.h .¥include¥r_rfd_cf.h .¥include¥rfd¥r_rfd_cf_error.h .¥include¥rfd¥r_rfd_cf_version.h .¥include¥rfd¥r_rfd_cf_api.h .¥include¥rfd¥r_rfd_cf_types.h	-
8	About RFD	What is the way to integration only Code Flash component and Common component for program/erase to Code Flash and/or Hardware Property Area?	R_RFD_CONTROL_TARGET_DATAFLASH set to R_RFD_DISABLE on r_rfd_config.h, and avoid compile following file for Data Flash component.(If don't avoid, occur warning) .¥source¥df¥r_rfd_df_api.c .¥source¥include¥r_rfd_df_local.h .¥include¥r_rfd_df.h .¥include¥rfd¥r_rfd_df_error.h .¥include¥rfd¥r_rfd_df_version.h .¥include¥rfd¥r_rfd_df_api.h .¥include¥rfd¥r_rfd_df_types.h	-
9	Target Device	Can work with different flash size products?	Can be operated, the operation area must be set in r_rfd_config.h. Addition, the actual operation area should check by user.	-
10	Target Device	Does it work on devices other than RH850/U2A?	Target devices are only RH850/U2A16 and RH850/U2A EVA. We haven't confirm operation on other than target devices.	-
11	Performance	The response time is different between described UM and processing time was measured. What can be the cause?	The response time is just referenced value. That time may change depends on store place, instruction align, state of pipeline, data stream on bus, etc.	-
12	Check status	What is the difference between R_RFD_GetFaciSequenceReady and R_RFD_GetFaciStatus?	R_RFD_GetFaciSequenceReady return sequencer operating or not. R_RFD_GetFaciStatus return result of sequencer operation. The basic usage is that check sequencer operation completed by R_RFD_GetFaciSequenceReady, then check result of sequencer operation by R_RFD_GetFaciStatus.	R_RFD_GetFaciSequenceReady R_RFD_GetFaciStatus
13	Data Flash	How to erasure/programming to Data Flash ?	Please refer following procedure 1. Initialize RFD 2. Release protection 3. Shift to Data Flash P/E mode 4. Initiate erasure/programming 5. Waiting completed erasure/program 6. Check result of erasure/program 7. If needed, repeat No.4 to No.6 8. Shift to Read mode 9. Set protection	R_RFD_Init R_RFD_DFIDAuth R_RFD_SetFHVE R_RFD_ShiftToPEMode R_RFD_CheckPEMode R_RFD_EraseDFRequest R_RFD_WriteDFRequest R_RFD_GetFaciSequenceReady R_RFD_GetFaciStatus

14	Data Flash	Cannot programing to Data Flash	Can be considered cause as follows.
			- Target area is not erased
			- Not shifted Data Flash P/E mode
			- Enable protection, Data Flash has the following protections for example.
			  - FHVE protect
			  - Activate Data Flash ID protection and not authenticate Data Flash ID
			  - Protect by ICUMXA
				R_RFD_EraseDFRequest
				R_RFD_SetFHVE
				R_RFD_ShiftToPEMode
				R_RFD_CheckPEMode
				R_RFD_DFIDAuth

15	Data Flash	When want to execute DMA program, which API should use?	RFD don't support DMA program.	-
16	Code Flash	How to erasure/programming to Code Flash ?	Please refer following procedure 1. Initialize RFD 2. Release protection 3. Shift to Code Flash P/E mode 4. Initiate erasure/programming 5. Waiting completed erasure/program 6. Check result of erasure/program 7. If needed, repeat No.4 to No.6 8. Shift to Read mode 9. Set protection	R_RFD_Init R_RFD_IDAuth R_RFD_SetFHVE R_RFD_ShiftToPEMode R_RFD_CheckPEMode R_RFD_EraseCFRequest R_RFD_WriteCFRequest R_RFD_GetFaciSequenceReady R_RFD_GetFaciStatus

17	Code Flash	Cannot programming to Code Flash	Can be considered cause as follows.
			- Target area is not erased
			- Not shifted Code Flash P/E mode
			- Enable protection, Code Flash has the following protections for example.
			  - FHVE protect
			  - Activate Customer ID protection and not authenticate Customer ID
			  - OTP
			  - Protect by ICUMXA
			  - FLMD protect
				R_RFD_EraseCFRequest
				R_RFD_SetFHVE
				R_RFD_ShiftToPEMode
				R_RFD_CheckPEMode
				R_RFD_IDAuth

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18	Hardware Property Area	How to erasure/programming to Configuration Setting Area,Security Setting Area, Block Protection Area ?	Sequence of updated Configuration Setting Area,Security Setting Area, Block Protection Area is bellow 1. Update manage flag for property area update to "Data Updating" [Recommend] 2. Erasure needed area from Configuration setting area, Security setting area and Block protection area - By using Property Erase command - It is sufficient to erase only the area where data to be rewritten exists 3. Programming needed area from Configuration setting area, Security setting area, Block protection area - By using Property Program command - For erased area, should program all data to programable area also including other than the data to be rewritten 4. Update manage flag for property area update to "Switch Updating" [Recommend]	R_RFD_ErasePropertyRequest R_RFD_WritePropertyRequest R_RFD_EraseSwitchRequest R_RFD_WriteSwitchRequest R_RFD_EraseTagRequest R_RFD_UpdateTagRequest
↑	↑	↑	5. Erasure Switch Area - By using Switch Erase command 6. Programming Switch area - By using Switch Program command - Create data(CVA, SVA, BVAm(m=0,1)) to select the area programmed with No.1 and No.2. 7. Update manage flag for property area update to "Tag Updating" [Recommend] 8. Erasure Tag Area - By using Tag Erase command 9. Update Tag Area - By using Tag Update command 10. Update manage flag for property area update to "Completed" [Recommend] 11. Check FSWASTAT_0.SWAS and if indicate "Valid", Complete. if indicate "Dirty", re-execute from No.4 *We assume Update manage flag is managed by EEPROM emulation method.	↑
19	Hardware Property Area	Cannot programming to Hardware Property Area	Can be considered cause as follows. - Target area is not erased - Not shifted Data Flash P/E mode - Enable protection, Code Flash has the following protections for example. - FHVE protect - Activate Customer ID A protection and not authenticate Customer ID A - OTP - Protect by ICUMXA	R_RFD_ErasePropertyRequest R_RFD_SetFHVE R_RFD_ShiftToPEMode R_RFD_CheckPEMode R_RFD_IDAuth
20	Hardware Property Area	Cannot change the value in Configuration Setting Area,Security Setting Area, Block Protection Area at succeed programming.	May enable protect for example OTP, Customer ID A, or May not authenticate target ID data When protection is set only for a specific area in each area, protected area cannot update but programed same data on valid area.	R_RFD_ErasePropertyRequest R_RFD_IDAuth
21	Hardware Property Area	What is the state if shut-off during erasure/programming of the Configuration Setting Area,Security Setting Area, Block Protection Area?	Since the flash memory is used two blocks and the old and new data are stored alternately, so the data before the erasure/programming is preserved. However if occur shut-off during erasure/programming Switch Area and Tag Area that stored the information that indicates which block contains valid data. it is called state of "dirty". It is dangerous to leave this state, so if it is in this state, please re-update the Switch Area and Tag Area to restore to valid state.	R_RFD_ErasePropertyRequest R_RFD_WritePropertyRequest R_RFD_EraseSwitchRequest R_RFD_WriteSwitchRequest R_RFD_EraseTagRequest R_RFD_UpdateTagRequest R_RFD_EraseExtendedDataRequest R_RFD_WriteExtendedDataRequest
22	Hardware Property Area	How do update only specific data in the Configuration Setting Area,Security Setting Area, Block Protection Area?	Cannot update only specific data in the Hardware Property Area due to device specification. About the no-need updating data, please programming same data that read from valid area.	-
23	Hardware Property Area	What is the Extended Data Area ?	This Data is user can use as desired on Hardware Property Area. We assumed used for user's own OPBT or flag for Code Flash update and etc.	R_RFD_EraseExtendedDataRequest R_RFD_WriteExtendedDataRequest
24	Double map	Is there caution for using Double map mode ?	Set the R_RFD_MAPMODE to R _RFD_DOUBLE in r_rfd_config.h, and the code flash address information specify to the back side address. Addition, cannot dynamic switching between single map mode and double map mode. Other caution of depends device specification, please see Device UM.	R_RFD_CFAddressToFaciNumber
25	Double map	Can erasure/programming to front side of Code Flash ?	In double map mode, explain specify back side address in r_rfd_config.h. so front side address is made not operate.	R_RFD_CFAddressToFaciNumber
26	Flash Characteristics	What is the data that read from erased area ?	Read data is All 1b when after correct completed erasure.	-
27	Flash Characteristics	What is the state when occur shut-off during erasure ?	That area is unfixed.	-
28	Flash Characteristics	What is the difference between erased data and programed all 1b data?	Programed all 1b data don't occur ecc error when read, but erased data occur ecc error when read. Addition, In the Erase state of the Code Flash, information of the corresponding Blank check Area that Blank Flag, Address parity bit, ECC bits are 1b, In the Erase state of the Data Flash, information of the corresponding Blank check Area that Blank Flag, ECC bits are 1b.	-
29	Flash Characteristics	How to recover from shut-off during erasure ?	Need re-erasure failed block.	-
30	Flash Characteristics	What is the state when occur shut-off during erasure ?	That area is unfixed.	-
31	Flash Characteristics	If occur shut-off during programming, does it affect(such as the cell retention value being broken) areas other than the programing target ?	No affect other than target area.	-
32	Flash Characteristics	After occur shut-off during programming, can programming other failed area in same block without re-erasure ?	No problem.	-
33	Flash Characteristics	What is the value of FRDY's time out?	Please refer to Electrical Characteristics of Device UM.	-
34	Suspend/Resume	How to procedure for suspend ?	Suspend is available during erasure and programming. Please call R_RFD_SuspendPERequest during sequencer operate erasure or programming. When return R_RFD_OK, already stopped sequencer. When return R_RFD_BUSY, accept suspend command, so please wait stopped sequencer by using R_RFD_GetFaciSequenceReady When return R_RFD_REJECT, not sufficient suspend acceptable condition, so please re-call R_RFD_SuspendPERequest.	R_RFD_SuspendPERequest R_RFD_GetFaciSequenceReady
35	Suspend/Resume	The state of Sequencer not to be "suspended" after suspending.	Depending on the state of the sequencer, even if issue a suspend command, the process may be completed without being suspended.	-
36	Suspend/Resume	How to procedure for resume ?	Call R_RFD_ResumePERequest in the following condition - suspended state - sequencer stopped - same P/E mode as suspended. - not command lock state After executed R_RFD_ResumePERequest, resume suspended process. So please wait completed sequencer operation by using R_RFD_GetFaciSequenceReady	R_RFD_ResumePERequest R_RFD_GetFaciSequenceReady

Revision History

Revison	Content	date
0.1	Initial version(draft)	2019/4/26
1.0	Released version	2020/7/1