

Additional Instructions SERIES Z60

Software Update by using the Flash Development Toolkit



- Additional instruction for ELGO Z60 units
- Preparation and software update procedure
- Installation of the Flash Development Toolkit
- Configuration of the Flash Development Toolkit



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2 General

In order to update the software of a Z60 device, the open source software "Flash Development Toolkit" is used. This manual describes all necessary steps to update the device software.

3 Save the .mot File on the Computer

The current Z60 software will be provided as a <u>.mot</u> file by ELGO Electronic GmbH. After receiving the file (e. g. Z60_000_V51.mot) it must be saved on an arbitrary location on your computer.

4 Preparing a Link Cable

For the update procedure, a serial connection between the Z60 unit and a PC with an already installed Flash Development Toolkit (see @ 5) is required. For this purpose a special cable must be configured.

To make such a link cable, the following parts are required:

- 1 male D-SUB connector (9-pin)
- 1 female D-SUB connector (9-pin)
- 1 shielded cable with 3wires

The following figure shows the pinning of the required link cable:



9-pin D-SUB (male)

9-pin D-SUB (female)

ð



5 Installation of the Flash Development Toolkit

5.1 Download the Flash Development Toolkit

1. First use the following link >> to create an account on <u>Renesas.com</u>

2.	Then login, agree the terms and download the actu	al software fron	า	
	https://www.renesas.com/eu/en/software/D301733	<u>35.html</u>		
	The download link can be found on the bottom of t	his page:		
	Product Name	File Name	File Size	Download Link
	[Evaluation Software] Flash Development Toolkit V.4.09 Release 03	fdtv409r03.exe	40.31 MByte	Download

3. Save the downloaded .exe file (e. g. fdtv409r03.exe) to an arbitrary folder or location on your computer.

5.2 Installation of the FDT Toolkit

Open the folder where you saved the .exe file before and double-click the file:







Installation of the Flash Development Toolkit

Renesas Flash Development To	olkit (v4.08) - InstallShield Wizard
	Welcome to the InstallShield Wizard for Renesas Flash Development Toolkit (v4.08) The InstallShield Wizard will install Renesas Flash Development Toolkit (v4.08) on your computer. To continue, click Next.
	< Back Next > Cancel

Choose the language for the installation and click

Select Language	RENESAS
Language selection will determine t	he language of the installed help and user documentation.
 International (English) 	
🔘 Asia (Japanese)	
🔘 Asia (English)	
	Release Notes
stallShield	
istallShield	



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License Agr	eement			200		
Please read	the following lice	ense agreement c	arefully.		NES	
Software U	ser License Agre	ement				
The custon Electronics agree to the User Licens concerning	ner (hereafter refo Corporation(here e terms and cond se Agreement(he the enclosed so	erred to as "Licen: eafter referred to a ditions as specified reafter referred to ftware and its exp	see") and Reness is "Licensor") do H d in this Software as "Agreement") Ianatory manuals.	as hereby		
ARTICLE 1 1.1 "Licens tools an in Sectio manuals	. Definition ed Software'' sh d related executa on 1.4 below and and all other rel	all mean the main able programs, the I documentation s ated materials.	unit of the softwa > "Library" as defir uch as explanator	re ned y		Ŧ
 I accept I do not 	the terms of the accept the terms	license agreemen of the license agr	t reement		Print	

Select only the FDT Application "**USB Drivers**" as in the picture below:

Renesas Flash Development Toolkit (v4.08) - InstallShie	ld Wizard 📃	x
Select Features Select the features setup will install.	RENESA	S
Select the features you want to install, and deselect the I	features you want to uninstall.	
FDT Application FDT Application Cernels: Protocol B & C Cernels: Protocol D USB Drivers	Description Installs USB drivers.	
0.00 MB of space required on the C drive 38082.18 MB of space available on the C drive InstallShield		
- KBa	ck Next> Cancel	
Then click		





Select Options		RENESAS
Setup requires you	to make the following ch	oices:
🔲 Clean up old se	ttings. This option remove	es any existing settings before installing.
Associate data file:	s. Data files will open in Fl	DT.
🔲 .a20	fpr	
🔳 .a37	🔽 .mot	
🔲 .bin	.rec	
.cde	.\$2	
🔲 .ddi		
		< Back Next > Cancel

Choose the part of destination with the Browser Button:

Choose Destination Location	26	
Select folder where setup will install files.		INC SIT
Setup will install Renesas Flash Development	Toolkit (v4.08) in the following	g folder.
To install to this folder, click Next. To install to another folder.	a different folder, click Brows	e and select
Destination Folder		
Destination Folder C:\Program Files (x86)\Renesas\FDT4.08		Browse
Destination Folder C:\Program Files (x86)\Renesas\FDT4.08 InstallShield		Browse
Destination Folder C:\Program Files (x86)\Renesas\FDT4.08 InstallShield	< Back Next >	Browse







The installation of the FDT tool is finished...



6 Preparation of the Z60

6.1 Change into the Update Mode

- 1. Disconnect the Z60 from power resp. remove all connectors on the rear
- 2. Loosen the screws on the back of the Z60 housing and remove the housing
- 3. On the second back PCB you will find a slide switch (see figure below)
- 4. By changing the slider to the right position (seen from the top and back), the unit will change from <u>normal mode</u> to the <u>update mode</u>:



- 5. Then connect the Z60 device to the PC by using the link cable (described in section @ 4)
- 6. Leave the device in <u>switched OFF status</u>...



7 FDT Configuration (only for first use)

→ Start the Flash Development Toolkit

If there are two versions of FDT in the "Renesas-Folder", only use the FDT Basic version!

In the first dialog scroll down and choose "Generic BOOT Device"

Choose Device A	Ind Kernel			×
The FLASH Dev Select the devic	velopment Toolkit supports a num e you wish to use with this projec	ber of Renesas FLAS t from the list below.	H devices.	01
				Uther
Туре	Full Name	Kernel Version	Info	~
R8C R8C R8C R8C R8C R8C R8C R8C R8C R8C	R5F212G6 R5F212H1 R5F212H2 R5F212J0 R5F212J1 R5F212K2 R5F212K4 R5F212L2 R5F212L4 R5F3640D	1_0_00 1_0_00 1_0_00 1_0_00 1_0_00 1_0_00 1_0_00 1_0_00 1_0_00 1_0_00 1_0_00		
Generic BOOT	Device Generic BOOT Device	e N/A		~
	IIII	< Zurück	Weiter >	Abbrechen
Then click 🔽	Next >			

Choose the COM-PORT of your serial interface

Communications Port	2
Workspace Da FF 5B Workspace Torget industrial Cc Display Device image Display Torget files on Display Display Display Display	The FLASH Development Toolkit supports connection through the standard PC Serial port and the USB port. Use this page to select your desired communications port. All settings may be changed after the project is created. Select port: COM1 Select an Interface type to connect to the target device with. Normally this will be "Direct Connection" or simply left blank. Select Interface: Direct Connection
	<zurück weiter=""> Abbrechen</zurück>
nen click	



Reconnect the 24 VDC power supply of the Z60 device

(S1 Pin2 +24 V, Pin 3 GND) and make sure, that the device is switched on:

FLASH I	Development Toolkit		
	FDT will now attempt to connect to your generic device.		
	Please ensure the board is connected, powered and in Boot mode.		
	OK Abbrechen		
Then c	lick ok		

Wait until all green checkmarks are visible:

Query Generic Device						
\checkmark	Booting Device					
\checkmark	Sending Supported Devices Inquiry					
\checkmark	Selecting Device R5F61638					
\checkmark	Sending Clock Mode Ir	nquiry				
\checkmark	Selecting Clock Mode	0				
\checkmark	Sending Other Inquiries	\$				
		OK Cancel				

Then click

Workspace 40 DA F7 58 Workspace 1 40 50 res 10 Display 0 Device Inager Do 00 F5 5 1 LCD mobr 1 Keyboard m 5 DA 33 5 Comms.mot 1 Device Inager 1 CD mobr 2 E8 B1 5 Keyboard m 5 DA 33 5 Comms.mot 1 Device Inage 1 Device Inage 1 CD motor Control 2 E 1 2 C 1 Device Inage 2 Device Inage 2 Device Inage 2 Device Inage 2 Device Inage 3 Comms.mot 2 Device Inage 3 Comms.mot 2 Device Inage 3 Comms.mot 2 Device Inage 3 Comms.mot 3 Device Inage 3 Devi	Please enter the specific device op [R5F61638] using [Pr Select the external clock or the internal clock: Enter the CPU crystal frequency for the selected device: Enter the clock mode for the selected device: Select the multiplier for the Main clock frequency (CKM): Select the multiplier for the Peripheral clock frequency (CKP):	tions based on: otocol C] External Clock 14.7456 0 • 1 • 1 •	Mhz
·	< Zurück	Weiter >	Abbrechen



Uncheck "Use Default" and enter "115200" into the speed field:

Workspace 10 20 F5 50 Workspace Industrial Ce Display Device Inage Target files Comme mot Se B1 Comme mot Comme mot Device Image Comme mo	The FLASH Development Toolkit can connect to your device in number of different ways. All the options on this page may be changed after the Project has been created. Select Connection:
	< Zurück Weiter > Abbreche
ramming Options	
Vorkspace Workspace Industrial Co Display Device Image Target files Comms.mot Device Image Comms.mot Device Image Comms.mot Device Image Comms.mot Device Image Comms.mot Device Image Comms.mot Device Image Comms.mot Device Image Comms.mot	What level of device protection would you like? Protection Automatic Interactive None When programming the device, any blocks found to have been written previously will automatically be erased. What level of messaging would you like? Messaging Standard Advanced The Toolkit will display verbose messages whenever it is communicating with the Target device. This mode is useful for Interface hardware development, and Kemel development. Would you like to perform readback verification after programming Readback Verification Yes No

The FDT software is now configured for Z60 devices.



8 Z60 Software Update Procedure

- Start the Flash Development Toolkit
- The slider (see ☞ 6.1) must still be in the "update mode" position
- The Z60 device must be in power ON status

Check "User / Data Area" and browse the .mot file (described in section @ 3):

FDT Simple Interface (Unsupported Freeware Version)					
Options					
BASIC FILE PROGRAMMING Exit					
Device : R5F61638 Port : COM1					
File Selection					
Ownload File					
✓ User / Data Area S:\Projekte\Z60\Software\SN000\Z60_000_V051.mot					
User Boot Area					
Program Flash Disconnect					
Clock Frequency (External) = 14.7500MHz, CKM = 1, and CKP = 1 Changing baud rate to 115200 bps Set baud rate value = 115200					
Attempting to finalise connection to Generic R5F61638 device					
All blocks marked as blank Connection complete					

If "Connection complete" appears, the system is ready to flash the Z60.

Click Program Flash

Data programmed at the following positions:							
0x000	00000 -	- 0x00	00007F	Length	:	08000000x0	
0x000	00100 -	- 0x00	0002FF	Length	:	0x00000200	
0x000	00300 -	- 0x00	00057F	Length	:	0x00000280	
0x000	00800 -	- 0x00	OOBEFF	Length	:	0x0000B700	
47 K programmed in 5 seconds							
Image written to device							
Disconnecting							
Disconnected							

If the message "Image written to device" appears, the update was successful.



Important:

Please don't forget to switch the slider back to the <u>normal mode</u> (see @ 6.1) before installing the Z60 device back into the panel.



Z60 Software Update Procedure

Notes:





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