## altronic

## **DE-4000 ST-Link Programming Procedure**

R0 8/1/2018 R1 2/13/2019 R2 3/11/2019 R3 6/14/2019

- 1. Power OFF the unit.
- 2. Connect the ST-Link to the intended Module being updated.\* VERY IMPORTANT: Check that Pin 1 of the Module matches with Pin 1 of the 10-pin connector (See Figure 1.d and Figure 1.e). When connecting the ST-Link to a Module, unplug the ST-Link from the computer, and make sure that the Module is disconnected from power. This is very important because it will make sure that there are no short circuits. The correct setup can be seen in Figure 1.a, Figure 1.b, and Figure 1.c.
- 3. Power ON the unit.



Figure 1.a: ST-Link Programmer Connected to JTAG Board



Figure 1.b: ST-Link Connected to Controller Module



Figure 1.c: ST-Link Connected to Terminal Module





Figure 1.d: Pin Connection for Controller Module (Red strip is Pin 1)

Figure1.e: Pin Connection for Terminal Module

4. Open ST-Link V2:



**5.** After opening the program, it should match Figure 2:

File Edit User Target ST-1956 External Lowise Main	- 🗆 X
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Memory diploy Patrice University of the Universi	
Device Memory Kia ( b)(pr030)87300338.wae	LiveOpdata
Connect Erase Program and Verify	
Disconnect	

Figure 2: ST-Link Display

- 6. Click on the Connect icon 🖐.
- After a successful connection, click on the Erase icon 
   (This will erase the old .srec file from the Module. See Figure 3 and Figure 3.a)

	📕 STM32 ST-L	LINK Utility						<	
	File Edit View Target ST UNK External Loader Help								
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	Memory display				Device	STM32F42xxx/F43xxx			
	Address 040	0000000 - Gizer 0HE	LAGC	Poto Width: 22 bits	Device ID	0x419			
Old Loaded Firmware					Revision ID	1 MP.doc			
	Device Memory (	@ 0x08000000 : Pinary File			FIGSII SIZE	Impytes	LiveUp	date	English - Chile
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	07:39:02 : ST-LI 07:39:02 : Conne	NK Firmware version : V2J29S7 acted via SWD.	7						
	07-30-02 · SMD	Frequency = 4,0 MHz							
	07:39:02 : Debug	g in Low Power mode enabled.							
	07:39:02 : Device 07:39:02 : Device	e ID:0x419 e flash Size : 1MBytes						-	
	07-39-02 · Device	e family ·STM32F42vov/F43vov	2						

Figure 3: Erasing Chip

STM32 ST-	LINK Utility			-		×
File Edit Vie	w Target ST-LINK External Loader Help					
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07:39:02 : S1-L1 07:39:02 : ST-L1 07:39:02 : Conn 07:39:02 : SWD 07:39:02 : Conn 07:39:02 : Debu 07:39:02 : Debu 07:39:02 : Devic 07:39:02 : Devic	INK SIK 1 SUF-FU007/89/34/32400267 WK Firmware version : V2J2957 Frequency = 4,0 MHz. ection mode : Normal. g in Low Power mode enabled. a Dicke19 a Blash Size : IMBytes a flash Size : IMBytes					

Figure 3.a: Module Chip Erased

- 8. Click on the Program and Verify icon
- **9.** Figure 4 will appear. Once this window appears, click on Browse next to the File Path Box. Find the correct .srec file for the Module that is being configured. Click Start to program the Module.

File path       C:\Users\u4al_kd\Desktop\/O(pr010)07302018.srec       Bro         Extra options       Skip Flash Erase       Skip Flash Protection verifical         Verification	oran aduress	0×08000000		
Extra options          Skip Flash Erase       Skip Flash Protection verification         Verification       Image: Comparent terp of the programming         ick "Start" to program target.         After programming         Image: Comparent terp of the programming         Image: Comparent terp of the programming         Image: Comparent terp of t	File path	C:\Users\u4al_kd\Desktop\IO(pr0	10)07302018.srec	Browse
Verification  Verify while programming ick "Start" to program target. After programming Q Reset after programming Full Flash memory Checksure	Extra options	Skip Flash Erase	Skip Flash Protection	verification
ick "Start" to program target. After programming Reset after programming Full Flash memory Checksum	/erification	● Verify while programming	⊖ Verify after programm	ning
After programming Reset after programming	ick "Start" to pr	ogram target.		
Reset after programming Full Flash memory Checksum		ing		
	Alter programm	Reset after programming	Full Flash memory Ch	necksum
Start Cancel	viter programm			

**10.** Once the Module is programmed, the main page of the ST-Link will show Verification (Figure 5).

	STM32 ST-I	INK Utility						-	×
		w larget :		ternal Loade	гнер				
	- Memory display Address: 0x0 Device Memory	8000000 ~ © 0x08000000	Size: 0	x480D4 r010)0730201	Data Width:	32 bits 🗸	Device Device ID Revision ID Flash size	STM32F42xxx/F43xxx 0x419 Rav 3 1MBytes	LiveUpdate
	Target memory,	Address range	[0x0000000	0x080480D4]					
	Address	0	4	8	С	ASCII			^
	0x08000000	20000398	08042A19	08042A49	080403DD	~Ý			
	0x06000010	08042A4F	08042A4B	08042A4D	08042A51	0*K*M*Q*			
	0x08000020	08042A51	08042A51	08042A51	08042A51	Q*Q*Q*Q*			
	0x08000030	08042A51	08042A51	08022085	08017A91	Q*Q*´z.			
	0x08000040	08042A51	08042A51	08042A51	08042A51	Q*Q*Q*Q*			
	0x08000050	08042A51	08042A51	08042A51	08042A51	Q*Q*Q*Q*			
	0x0800060	08042A51	08042A51	08042A51	080176FB	Q*Q*Q*ûv			
	0x08000070	08042A51	08042A51	08029233	08042A51	Q*Q*3'Q*.			
	0x0800080x0	08042A51	080176BF	08042A51	08042A51	Q*2vQ*Q*			
	0x08000090	08042A51	08042A51	08042A51	08042A51	Q*Q*Q*Q*			~
Verification	12:09:35 : Conne 12:09:35 : SWD 12:09:35 : Debug 12:09:35 : Debug 12:09:35 : Devic 12:09:35 : Devic 12:09:35 : Devic 12:17:11 : Memo 12:17:11 : Verifie	ected via SWD. Frequency = 4 ection mode : 1 g in Low Power = ID:0x419 e flash Size : 1 = family :STM3 pry programmo cationOK	,0 MHz. Normal. r mode enable MBytes 12F42xxx/F43x d in 8s and 33	d. 12ms.					^

Figure 5: Complete Flash of Terminal Module

- 11. Click on the Disconnect icon  $\overline{\mathbb{G}}$  .
- **12.** Power OFF the DE-4000 System and disconnect the cable.