Titel/Title				Dokumentennr./Document No.	Seite/Page
Installation BARTH packages for Arduino				1708070102_ArduinoInstallBARTH	1 / 5
Projekt/Project	**Version**	**Rev.**	**Ersteller/Writer**	**Kontrolle/Control**	**Datum/Date**
Arduino	0.1	2	J. Schorowski		07.08.17

Table of contents

1 Thanks

BARTH MiniPLC STG-8xx Arduiono support is based on the Arduino for STM32 project. Special thanks to Roger Clark, Laurent Meunier and Frederic Pillon from http://www.stm32-duino.com/ and https://github.com/stm32duino.

2 Download Arduino IDE version 1.8.3 and install it.

Download link: https://www.arduino.cc/en/Main/Software

3 Install BARTH packages

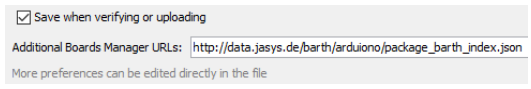
3.1 Hosting

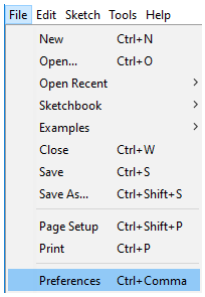
All Arduino Packages for BARTH STG-8xx hosted on GitHub:

https://github.com/jasysdotde/STG-8xx

3.2 Installation

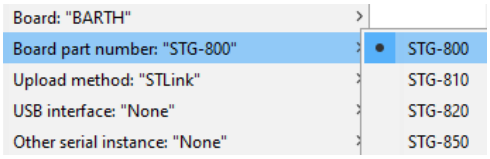
1. Start Arduino IDE
2. Choice File → Preferences
3. Put "https://github.com/jasysdotde/STG-8xx/blob/master/JSON/package_barth_index.json" in the Field "Additional Board ManagerURLs:"
4. Click OK
5. Choice Tools → Board: … → Boards Manager… and set type to "Contributed". Select "BARTH MiniPLC by BARTH elektronik"
6. Click install.
7. When install done, click Close





4 First project

1. Connect the ST-Link/V2 with PC and STG-8xx. Power up the STG-8xx.
2. Start Arduino IDE
3. Choice File → Examples → 01.Basics → Blink
4. Choice Tools → Board: → BARTH
5. Choice Tools → Board part number: → STG-8xx
6. Choice Tools → Upload method: → STLink
7. Choice Sketch → Upload



5 Samples

Download samples for BART MiniPLC's from:

- STG-800 https://github.com/jasysdotde/STG-8xx/blob/master/Examples/STG800.ino
- STG-810 https://github.com/jasysdotde/STG-8xx/blob/master/Examples/STG810.ino
- STG-820 https://github.com/jasysdotde/STG-8xx/blob/master/Examples/STG820.ino
- STG-850 https://github.com/jasysdotde/STG-8xx/blob/master/Examples/STG850.ino

6 Functionality

6.1 STG-850

STG-Pin	STG function	Arduino-PinNumber	Arduino function	Arduino init function
IN1	Analog input	A0	analogRead	
IN2	Analog input	A1	analogRead	
IN3	Analog input	A2	analogRead	
IN4	Analog input	A3	analogRead	
IN5	Analog input	A4	analogRead	
IN6	Analog input	A5	analogRead	
IN7	Digital input	10	digitalRead	pinMode(10, INPUT);
IN8	Digital input	11	digitalRead	pinMode(11, INPUT);
IN9	Digital input	12	digitalRead	pinMode(12, INPUT);
IN10	Digital input	13	digitalRead	pinMode(13, INPUT);
OUT1	Digital output HighSide	0	digitalWrite	pinMode(0, OUTPUT);
OUT2	Digital output HighSide	1	digitalWrite	pinMode(1, OUTPUT);
OUT3	Digital output HighSide	2	digitalWrite	pinMode(2, OUTPUT);
OUT4	Digital output HighSide	3	digitalWrite	pinMode(3, OUTPUT);
OUT5	Digital output HighSide	4	digitalWrite	pinMode(4, OUTPUT);
OUT6	Digital output HighSide	5	digitalWrite	pinMode(5, OUTPUT);
OUT7	Digital output HighSide	6	digitalWrite	pinMode(6, OUTPUT);
OUT8	Digital output HighSide	7	digitalWrite	pinMode(7, OUTPUT);
OUT9	Digital PWM LowSide	8	digitalWrite or analogWrite	pinMode(8, OUTPUT);
LED	Digital output	LED_BUILTIN		pinMode(LED_BUILTIN, OUTPUT);
(EEPROM)	EEPROM		EEPROM.*	
TTL232	TTL-RS232	Serial	Serial.*	Serial.begin(9600);

6.2 STG-820

STG-Pin	STG function	Arduino-PinNumber	Arduino function	Arduino init function
IN1	Analog input	A0	analogRead	
IN2	Analog input	A1	analogRead	
IN3	Analog input	A2	analogRead	
IN7	Digital input	6	digitalRead	pinMode(10, INPUT);
IN8	Digital input	7	digitalRead	pinMode(11, INPUT);
OUT1	Digital output HighSide	0	digitalWrite	pinMode(0, OUTPUT);
OUT2	Digital output HighSide	1	digitalWrite	pinMode(1, OUTPUT);
OUT3	Digital output HighSide	2	digitalWrite	pinMode(2, OUTPUT);
OUT4	Digital output HighSide	3	digitalWrite	pinMode(3, OUTPUT);
OUT5	Analog output	4	analogWrite	pinMode(4, OUTPUT);
LED	Digital output	LED_BUILTIN		pinMode(LED_BUILTIN, OUTPUT);
(EEPROM)	EEPROM		EEPROM.*	
TTL232	TTL-RS232	Serial	Serial.*	Serial.begin(9600);

6.3 STG-810

STG-Pin	STG function	Arduino-PinNumber	Arduino function	Arduino init function
IN1	Analog input	A0	analogRead	
IN2	Analog input	A1	analogRead	
IN3	Analog input	A2	analogRead	
IN7	Digital input	6	digitalRead	pinMode(10, INPUT);
IN8	Digital input	7	digitalRead	pinMode(11, INPUT);
OUT1	Digital output HighSide	0	digitalWrite	pinMode(0, OUTPUT);
OUT2	Digital output HighSide	1	digitalWrite	pinMode(1, OUTPUT);
OUT3	Digital output HighSide	2	digitalWrite	pinMode(2, OUTPUT);
OUT4	Digital output HighSide	3	digitalWrite	pinMode(3, OUTPUT);
OUT5	Digital PWM LowSide	4	digitalWrite or analogWrite	pinMode(8, OUTPUT);
LED	Digital output	LED_BUILTIN		pinMode(LED_BUILTIN, OUTPUT);
(EEPROM)	EEPROM		EEPROM.*	
TTL232	TTL-RS232	Serial	Serial.*	Serial.begin(9600);

6.4 STG-800

STG-Pin	STG function	Arduino-PinNumber	Arduino function	Arduino init function
IN1	Analog input	A0	analogRead	
IN2	Analog input	A1	analogRead	
IN3	Analog input	A2	analogRead	
IN7	Digital input	6	digitalRead	pinMode(10, INPUT);
IN8	Digital input	7	digitalRead	pinMode(11, INPUT);
OUT1	Digital output HighSide	0	digitalWrite	pinMode(0, OUTPUT);
OUT2	Digital output HighSide	1	digitalWrite	pinMode(1, OUTPUT);
OUT3	Digital output HighSide	2	digitalWrite	pinMode(2, OUTPUT);
OUT4	Digital output HighSide	3	digitalWrite	pinMode(3, OUTPUT);
OUT5	Digital PWM LowSide	4	digitalWrite or analogWrite	pinMode(8, OUTPUT);
LED	Digital output	LED_BUILTIN		pinMode(LED_BUILTIN, OUTPUT);
(EEPROM)	EEPROM		EEPROM.*	
TTL232	TTL-RS232	Serial	Serial.*	Serial.begin(9600);

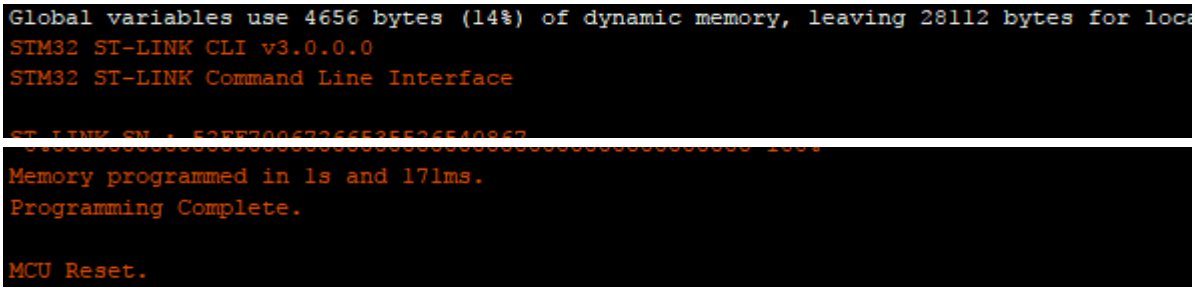
7 FAQ

7.1 Help

STG-8xx Hardware: https://www.barth-elektronik.com/en/Arduino-stg.html
STG-8xx Arduino Help: http://barth.jasys.de/arduino-help
Arduino specific Help: Support or Forum at https://www.arduino.cc/
and http://www.stm32duino.com/

7.2 Flashing not possible

The flashing process after compiling will not start like this screen:



Solution:
Check for installed DLL's:

- mfc100.dll
- msvcp100.dll
- msvcr100.dll

If the DLL's not installed, please install manually.

Try to run c:\Users\<user name>\AppData\Local\Arduino15\packages\STM32\tools\STM32-Tools\2017.7.13\tools\win\stlink\ST-LINK_CLI.exe manually and see the error output.

7.3 Program not running

It is possible that the program not run after flashing on new devices. In this case please disconnect the power, wait 5 seconds and reconnect power supply.