BQ76952003 – How to reconfigure settings

The EVM shipped with all jumpers configured for I2C Communications.

The BQ76952003 devices are configured for SPI communications and the REG1 output is configured to 5V. The instructions below are to change the settings of the device to I2C mode and to reconfigure REG1 as needed.

- 1. Use the latest version of BQStudio. The bqz file for the BQ76952 A3 device needs to be copied to the C:\ti\BatteryManagementStudio\config\ directory.
- 2. Connect host to microUSB connector on EVM. The host will setup the driver to use the onboard MSP430 communication adapter.
- 3. Reposition the jumpers on J19 and J16 for SPI. Place jumpers on J10 and J13. These locations are shown by the green circles in the Figure below.
- 4. Connect an external supply between 40-71 volts between Cell 16 and BAT-.
- 5. Start bqStudio application from shortcut on desktop or in menus under Texas Instruments. bqStudio will auto detect device the EVM and startup displaying valid cell voltages and register values on registers screen.



Bq76952 EVM connections

6. Open the Data Memory screen in BQStudio. For the Comm Type, select I2C Fast. (This is the default value for the BP76952 device, but the BQ7695203 has it set to SPI).

Calibration	Name			Value	Unit	
	✓ Fuse					
Settings	Min Blow Fuse Voltage			5000	mV	
Develor	Fuse Blow Timeout			30	s	
Fower	 Configuration 					
tem Data	Power Config			2982	Hex	
	REG12 Config			00	Hex	
tections	REG0 Con	fig	00	Hex		
Developent Fail	HWD Regu	lator Options	00	Hex		
Permanent Fall	Comm Type			00	_	
Security	12C Addree Settings: Configuration: Comm Type					
	SPI Confi	nfi				
	Comm Idl	Comm Idl Selects the active communication mode. This mode is applied on res				
	CFETOFF	If when the SWAP_COMM_MODE command is received. For bq769x2				
	DFETOFF	default mod	le is I ² C Fast. For bq769x201, the	e default mode is SP	I with CRC.	
	ALERT P					
	TS1 Cont	Setting Description				
	TS2 Cont	0x00	Default			
	TS3 Con1	0xff	Default			
	HDQ Pin	0x03				
	DCHG PI	0.000				
	DDSG Pli	UXU4	HDQ (using HDQ pin)			
	Veel Mor	0x07	I ² C (for use up to 100 kHz bus s	peed)		
	CC3 Sam	0x08	I ² C Fast (for use above 100 kHz	bus speed)		
	 Protection 		I ² C Fast with Timeouts (for use above 100 kHz bus speed)			
	Protectio	0x09				
	Enabled I	0x0f	SPI			
	Enabled I	0x10	SPI with CRC			
	Enabled I					
	CHG FET	UXII	I*C with CRC (for use up to 100 kHz bus speed)			
	CHG FET	0x12	I ² C Fast with CRC (for use abov	re 100 kHz bus spee	d)	
	CHG FET F	Protections C		56	Hex	

7. Modify the REG1 setting to the desired value. It is off by default for the BQ76952 device, but the BQ7695203 device has it set to 5V.

REG12 Config				00	Hex							
REG0 Config	•	Satting and Conference tions DEC40 Confer										
HWD Regulator Opt	э	Settings.configuration.REG12 COnfig										
Comm Type	0	Configuration ontions for the voltage regulator outputs										
I2C Address	configuration options for the voltage regulator outputs											
SPI Configuration	D	REG2V 2_REG2V 0 (Bits 7_5)										
Comm Idle Time	ĸ											
CFETOFF Pin Config	S	Selects voltage level for REG2 This setting should not be changed while REG2 is enabled.										
DFETOFF Pin Config	is											
ALERT Pin Config												
TS1 Config		Setting	D	escription								
TS2 Config		0-3	18V	•								
TS3 Config		4	2.5.V									
HDQ Pin Config		-	2.5 V									
DCHG Pin Config		5	3 V									
DDSG Pin Config		6	3.3 V									
DA Configuration		7	5 V									
Vcell Mode												
CC3 Samples	R	REG2 EN (Bit 4)										
Protection												
Protection Configure	С	Configure default state for REG2 output. This setting is reapplied when										
Enabled Protections	in	initializing after reset or DEEPSLEEP mode.										
Enabled Protections												
	-		-				_					

- 8. To change these values in OTP, follow the steps to program OTP in the EVM User Guide. Once these settings are programmed, they cannot be changed back.
- 9. If the settings have been changed to I2C, reconfigure the EVM jumper settings to I2C. Cycle power on the device and the new settings will take effect.