CY8CKIT-036 THERMAL MANAGEMENT KIT

I²C Connector

Fan Socket

Temperature Sensor with I²C Interface

Temperature Sensor with One-wire Interface

Temperature Sensor with a PWM Output

Diode Temperature Sensors

❶ ❷ ❸
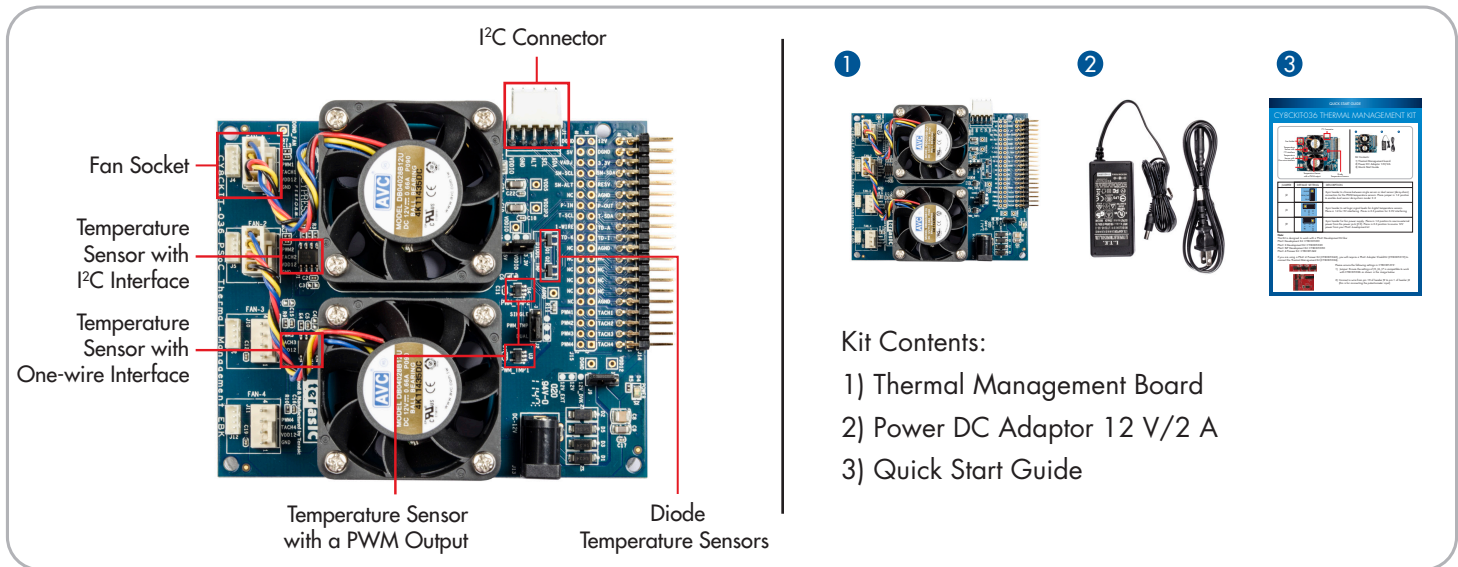
Kit Contents:
1) Thermal Management Board
2) Power DC Adaptor 12 V/2 A
3) Quick Start Guide

| Jumper	Default Setting	Description
J2	SINGLE / PWM_TMP / DUAL	3-pin header to choose between a single-sensor or a dual-sensor (daisy-chain) connection for the PWM temperature sensors. Place jumper in 1-2 position to enable dual-sensor daisy-chain mode
J3	5 V / VDDIO / 3.3 V	3-pin header to set logic signal levels for digital temperature sensors. Place in 2-3 position for 3.3-V interfacing (and the kit projects)
J9	12 V_EXT / 12 V / 12 V_DVK	3-pin header for fan power supply. Place in 1-2 position to source external power from the power jack (J13)

Note:
This Kit is designed to work with the following PSoC® Development Kits:

PSoC Development Kit: CY8CKIT-001	PSoC 5LP Development Kit: CY8CKIT-050
PSoC 3 Development Kit: CY8CKIT-030	PSoC 4 Pioneer Kit: CY8CKIT-042

If you are using a PSoC 4 Pioneer Kit (CY8CKIT-042), you will require a PSoC Adapter Shield Kit (CY8CKIT-019) to connect the Thermal Management Kit (CY8CKIT-036)
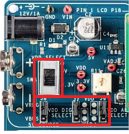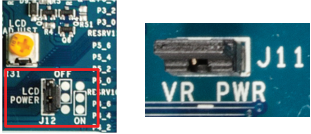
Please ensure the following settings in CY8CKIT-019:

1) Jumpers: Ensure the settings of J5, J6, J7 are compatible with CY8CKIT-036, as shown in the image

CY8CKIT-036

J7   J6   J5
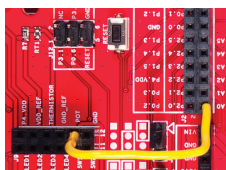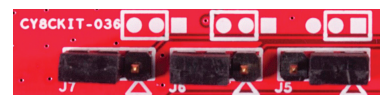
2) Connect a wire from pin 10 of header J9 to pin 1 of header J2 (this is to connect the potentiometer input)

PSoC® 1 / PSoC 3 / PSoC 5LP USERS

| Before you start, check these settings in your PSoC Development Kit		
If you are using:	**Check for:**	
CY8CKIT-001	Set 'VDD DIG' and 'VDD ANLG' to 3.3 V using SW3, J6 and J7 on the CY8CKIT-001. Set J8 to VREG	
	Ensure the LCD Power jumper (J12) is set to ON and the LCD is plugged into CY8CKIT-001. Connect jumper J11 to enable power to the potentiometer	
CY8CKIT-030 or CY8CKIT-050	Set 'VDDD' and 'VDDA' to 3.3 V by placing jumpers in the 1-2 position of J10 and J11. Enable POT_PWR by installing a jumper on J30 of the kit	

1
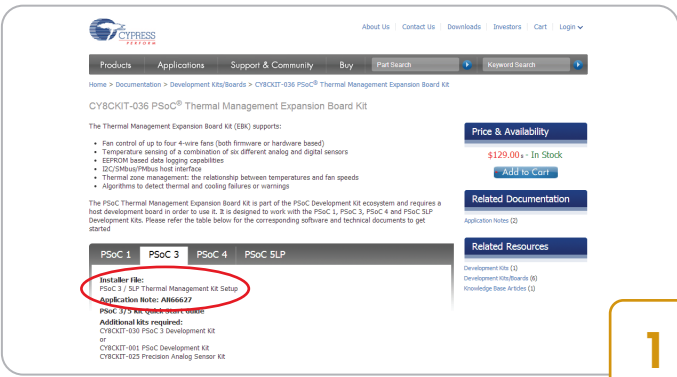
- Download and Install the latest kit software and examples from www.cypress.com/go/CY8CKIT-036
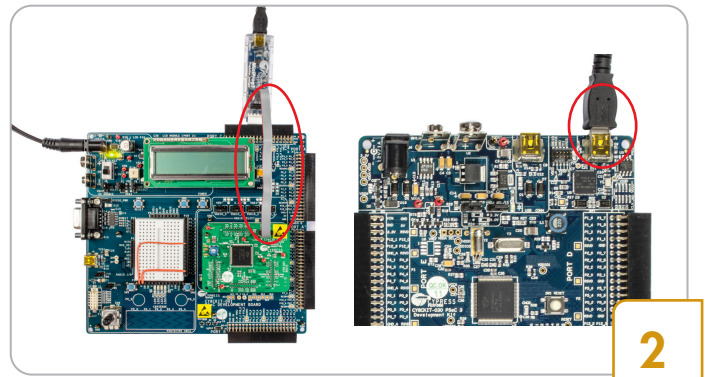
2

- Connect your Cypress Programmer
  - If you are using a CY8CKIT-001, connect the MiniProg3 to the PSoC processor module.
  - If you are using a CY8CKIT-030 (PSoC 3) or CY8CKIT-050 (PSoC 5LP), connect the USB cable to the onboard programmer

3
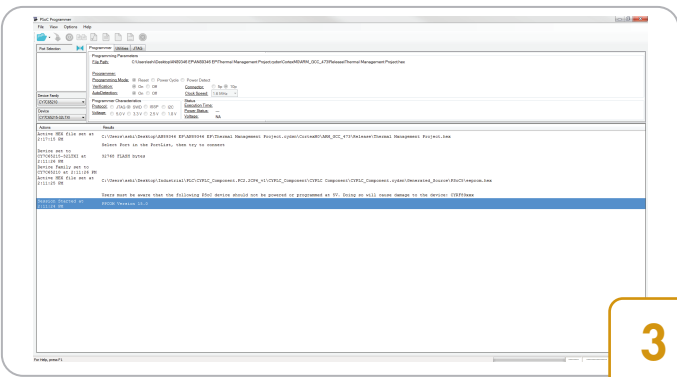
- Open the PSoC Programmer software in your computer
  - Go to Start > All Programs > Cypress > PSoC Programmer

4

| Product Family	Development Kit	Hex File name	File Path
PSoC 1	CY8CKIT-001	CY8CKIT-001_P1.Hex	<Installation Directory>\PSoC 1 Thermal Management EBK\<version>\HexFiles
PSoC 3	CY8CKIT-030	CY8CKIT-030_P3.Hex	
	CY8CKIT-001	CY8CKIT-001_P3.Hex	<Installation Directory>\PSoC3_5 Thermal Management EBK\<version>\HexFiles
PSoC 5LP	CY8CKIT-050	CY8CKIT-050_P5LP.Hex	
	CY8CKIT-001	CY8CKIT-001_P5LP.Hex	

- Open the Thermal Management project hex file in the PSoC Programmer software
- Refer to the table above to select the correct hex file for your development kit
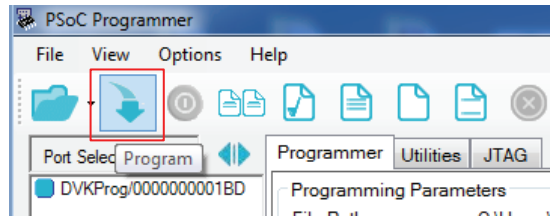
PSoC® 1 / PSoC 3 / PSoC 5LP USERS
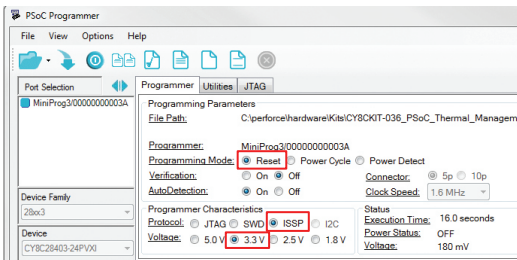
Parameter settings for PSoC 1 Users
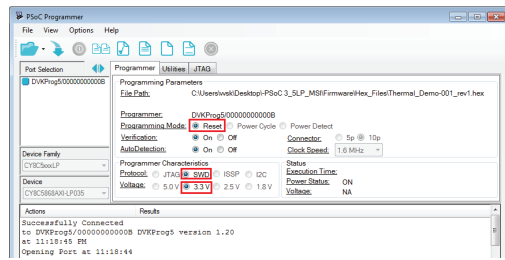
Parameter settings for PSoC 3 / PSoC 5LP

5

- Select the following parameters in the PSoC programmer:

For PSoC 1 Users:	**For PSoC 3 / PSoC 5LP Users:**
1. Programming mode as 'Reset'	4. Programming mode as 'Reset'
2. Protocol as 'ISSP'	5. Protocol as 'SWD'
3. Voltage as '3.3 V'	6. Voltage as '3.3 V'

- Click the 'Program' button in the PSoC Programmer software
- The PSoC programmer will indicate successful programming in the status window
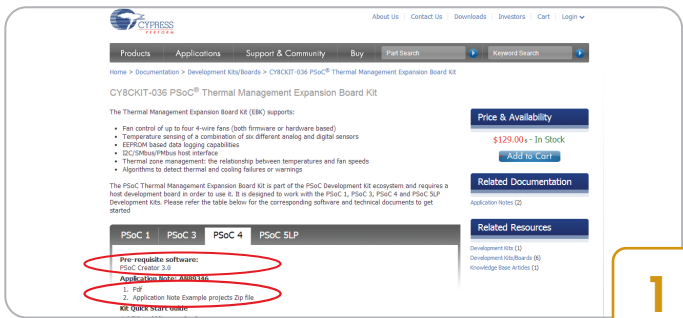

CY8CKIT-001

CY8CKIT-030 or
CY8CKIT-050
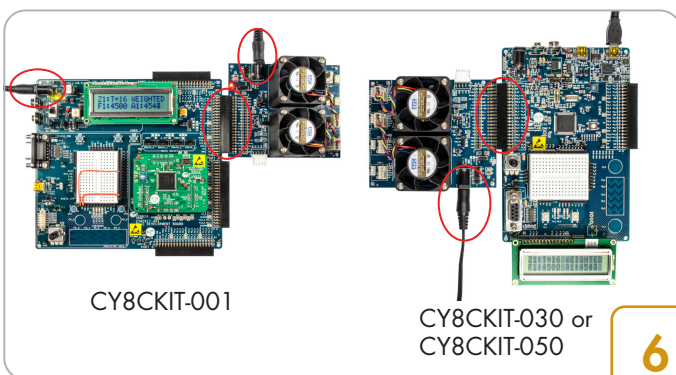
6

- Connect J14 of the CY8CKIT-036 to:
  - Port A of CY8CKIT-001

    or
  - Port E of CY8CKIT-030 or CY8CKIT-050
- Connect the power cable to the kits

LCD Output

CY8CKIT-001

CY8CKIT-030 or
CY8CKIT-050
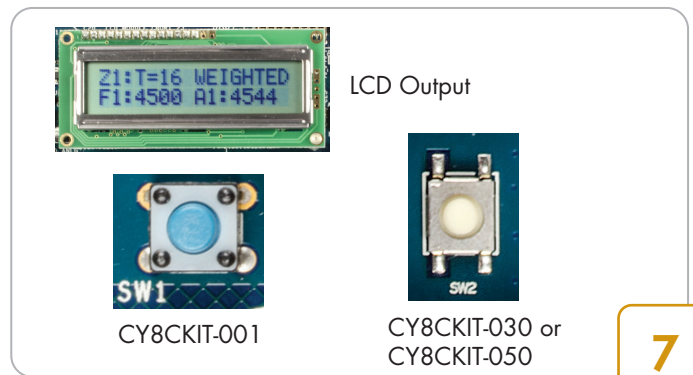
7

- View the output in the display showing the temperature reading and the fan speed
- Use SW1 (in CY8CKIT-001) or SW2 (in CY8CKIT-030/ CY8CKIT-050) to navigate between the thermal management screens on the LCD
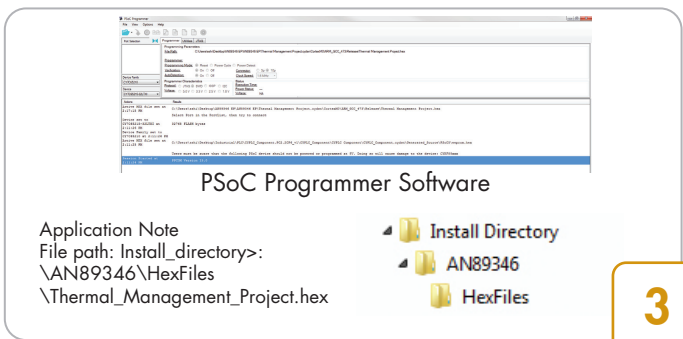- Refer to the User Guide to learn more about the kit and the solutions

PSoC 4 USERS

1

- Download and install PSoC Creator software from www.cypress.com/go/CY8CKIT-036
- Download the application note (AN89346) pdf document and the zip file (which includes the example project files). Unzip the file and save the folder to your preferred directory
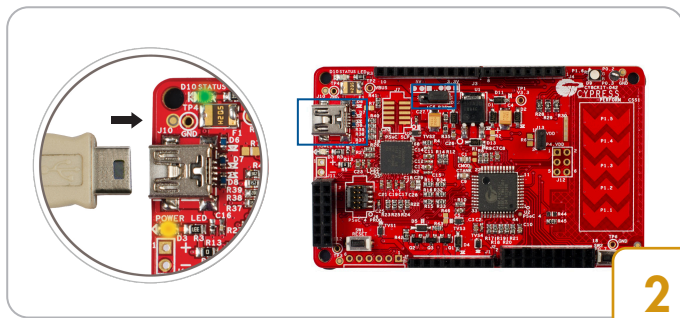

2

- Connect the USB cable to the onboard programmer of the PSoC 4 Pioneer Kit
- Place a jumper in position 1-2 of J9

PSoC Programmer Software

Application Note
File path: Install_directory>:
\AN89346\HexFiles
\Thermal_Management_Project.hex

3

- Open the PSoC Programmer software
- Go to Start > All Programs > Cypress > PSoC Programmer
- Open the Thermal Management project hex file from the downloaded application note folder

Parameter settings in PSoC Programmer
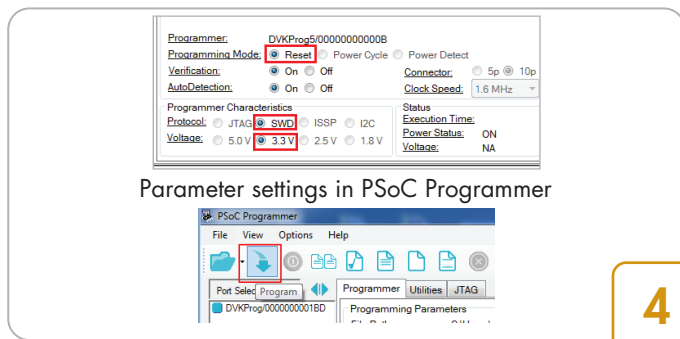
4

- Select the parameters in the PSoC Programmer, as shown in the figure above
- Click the 'Program' button and view the status message indicating successful programming
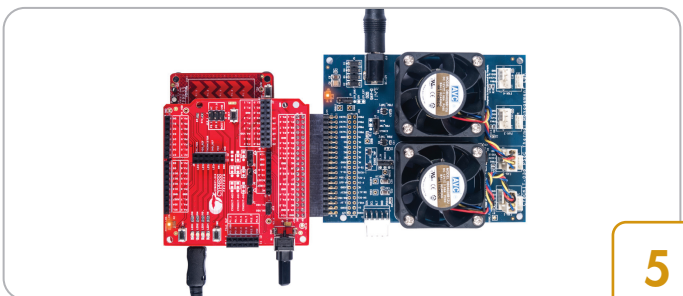
5

- Connect the PSoC Shield (CY8CKIT-019) to the PSoC Pioneer Kit (CY8CKIT-042). Then, connect the Thermal Management Kit (CY8CKIT-036) to the PSoC Shield (CY8CKIT-019)
- Connect the 12-V/2-A power adapter to the power jack J13 of the Thermal Management Kit (CY8CKIT-036)
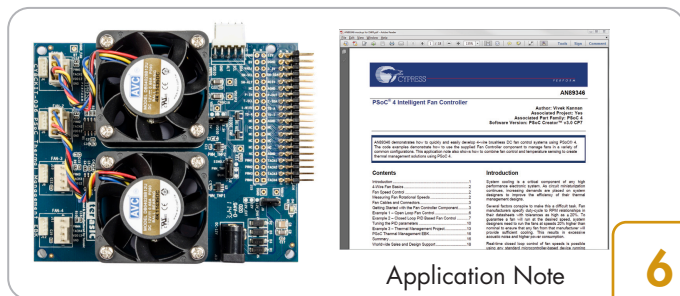
Application Note

6

- You will see the fans rotating at a speed set by the thermal algorithms running in PSoC 4. You can vary the fan speed by adjusting the potentiometer (on CY8CKIT-019)
- Refer to the application note (AN89346) documentation to learn more about the projects, the thermal algorithms, and the kit

For the latest information about this kit and to download kit software and hardware files, visit http://www.cypress.com/go/CY8CKIT-036

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