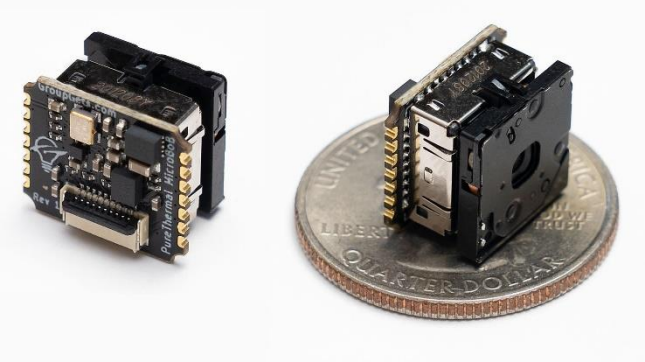
PURETHERMAL Micro Breakout Board

TELEDYNE FLIR Lepton® I/O Module

March 2023 - Datasheet Revision 1

The **PureThermal Micro Breakout Board** is an ultra-compact module designed for easy interfacing with FLIR's Lepton thermal imaging sensors. It can be soldered onto a PCB using the castellated breakout or connect it via a 10-pin flat flexible cable (FFC) or flexible printed circuit (FPC) to communicate with the Lepton via I^2C and VoSPI. This module takes care of the Lepton voltage supplies and 25MHz master clock, simplifying the integration process for designers.



Sample Lepton 3.5 thermal images showing a finished 3D printed object imaged with different colorization settings.

FEATURES

- Open-source reference code is on the GroupGets GitHub for getting started
- Compatible with all current 2.x, 3.x, and FS Lepton cores
- Super compact 12.2x14mm form-factor that can be embedded into other modules
- Castellated edges for integrating the module with a PCB.
- KiCAD footprint for easy integration into new designs
- 10-pin FPC/FFC connector – 0.020" (0.5mm) pitch, top and bottom contacts

SPECIFICATIONS

Input Voltage Range (VIN)	3.3-5VDC
Operating Voltage (Logic level)	3V
Lepton Core Support	Lepton 2.x, 3.x, FS
Thermal Video Output	SPI
Part Number	GG-PT-M-BOB
RoHS Compliant	Yes

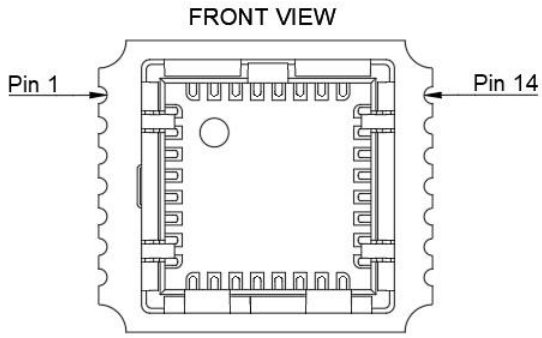
APPLICATIONS

- Thermal imaging in confined spaces
- Non-contact temperature measurements
- Electrical inspection and diagnostics
- Moisture or leak detection
- Integration with IoT devices
- Night vision imaging
- Gesture recognition
- Fire detection and prevention
- Light weight drone thermal imaging
- Motion sensing

Pinout

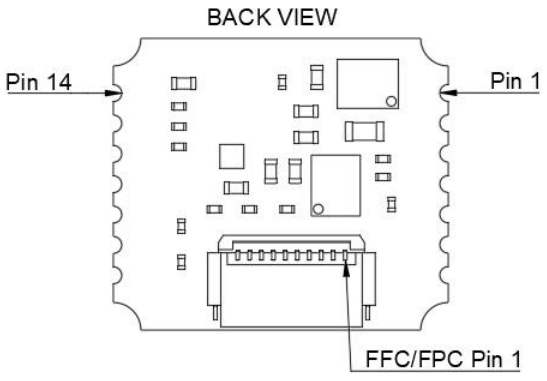
Breakout Pins

Pin #	Function
1	GND
2	SPI_CS
3	SPI_CLK
4	SPI_MISO
5	SPI_MOSI
6	VIN
7	VSYNC
8	GND
9	EN
10	I^2C_SCL
11	I^2C_SDA
12	CLK_STBY
13	PW_DWN_L
14	RESET_L

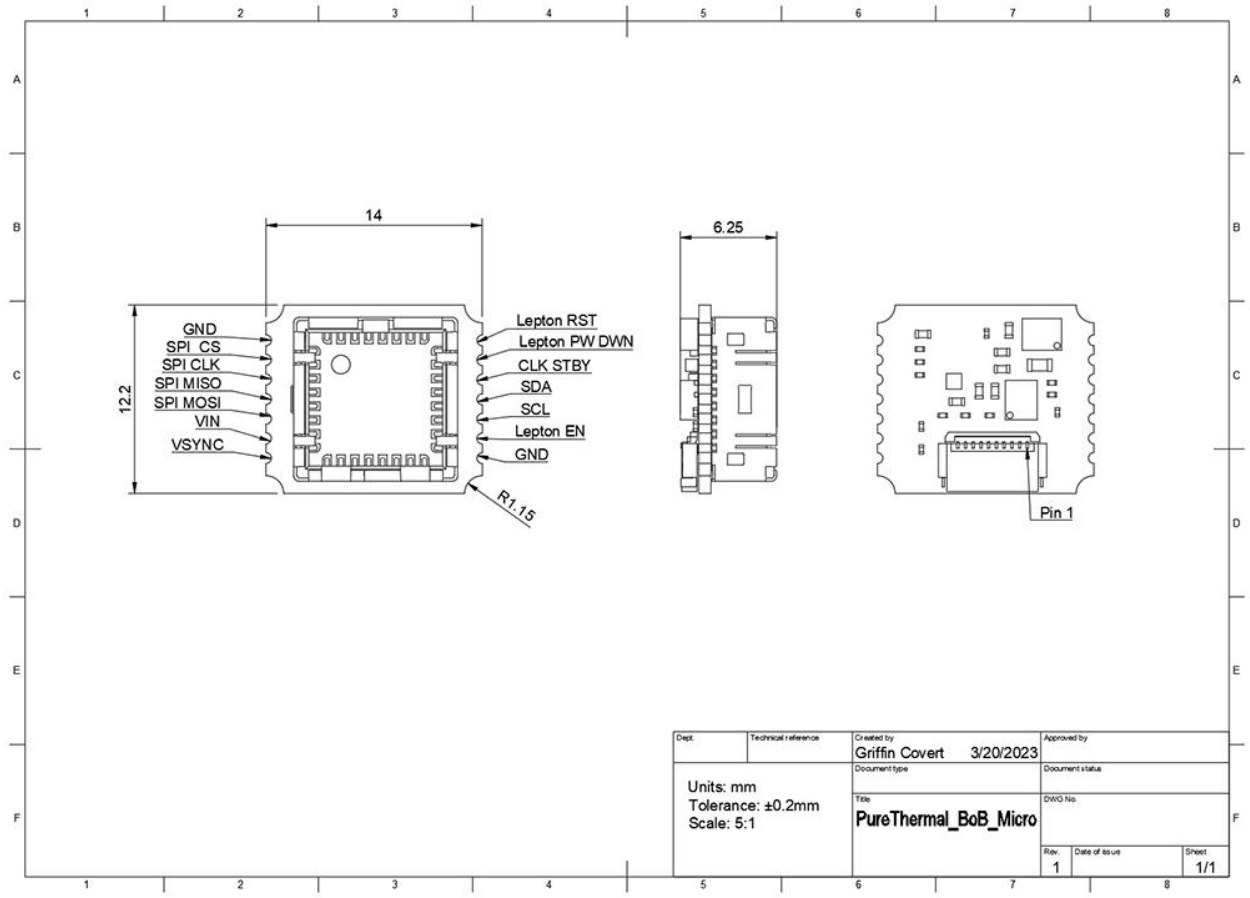


FFC/FPC Pins

Pin #	Function
1	GND
2	EN
3	VSYNC
4	VIN
5	SPI_MOSI
6	SPI_MISO
7	SPI_CLK
8	SPI_CS
9	I^2C_SDA
10	I^2C_SCL



Dimensions



https://groupgets-files.s3.amazonaws.com/PT%20Micro%20Breakout%20Board/PTMBoB_Dimensions.pdf

Datasheet Revision History

Revision 0 – March 2023

- Datasheet created.