FLIR QUARK interface and FFC board

- Versatile, simple camera control through PWM, digital I/O
- SWaP (Size, Weight, and Power)
- Adds less than 4mm in height to a FLIR Quark
- Easier to access connector than stock Quark
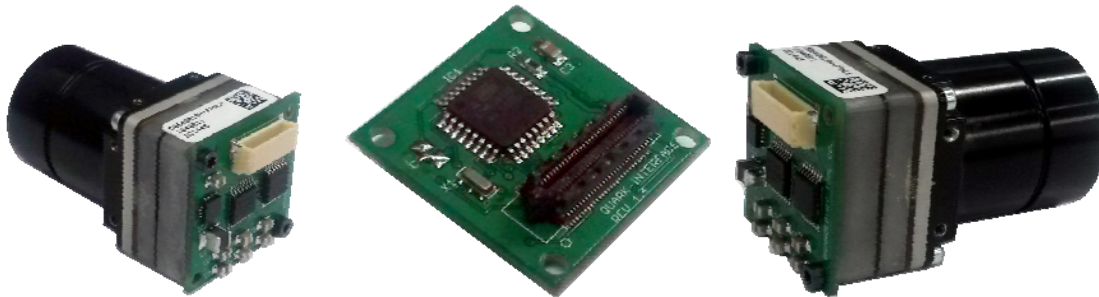- Built-in, wide voltage range regulator for board and camera power

Figure 1: Top, Bottom, and mated to FLIR Quark

The FLIR QUARK interface board is a small, lightweight and low power board that connects directly to a FLIR Quark infrared camera and performs an automatic start sequence of commands and then translates other signals, such as PWM or digital, to camera commands and/or passes through serial commands. The board automatically performs a Flat Field Correction (FFC) on power up of the camera, and then switches the serial line to an external RS-232 input so the camera can be controlled by an autopilot or computer. BTC can customize the board to perform any command sequence on startup, or to translate digital logic, PWM pulses into camera commands. Commands can be found in http://cvs.flir.com/tau2-quark-software-idd. lens

The board is also capable of triggering camera commands from PWM signals and/or digital I/O for systems that do not have or do not wish to use serial commands on the camera. The board can be factory modified to be capable of analog voltage level, SPI and TTL inputs.

The board also features a precision 3.3V regulator to power the board and the Quark from any power source 4.75-36VDC.

Specifications:

Specification	Amount	Unit
Weight	2	grams
Dimensions (L x W x H)	.3" x .9" x .9"	inches
Vcc	4.75 to 36	VDC
Power consumption, Typical (1)	100	mW
Serial baud rate (2)	0-250	kbps
Serial output voltage swing	+/- 5.4	VDC
Serial input threshold, Low	1.2	VDC
Serial input threshold, Low	1.5	VDC

(1) Board only. Does not include the FLIR Quark.
(2) While the board will level shift any baud rate up to 1Mbps, the Quark only accepts certain baud rates. See http://cvs.flir.com/tau2-quark-software-idd, section 3.1.2.
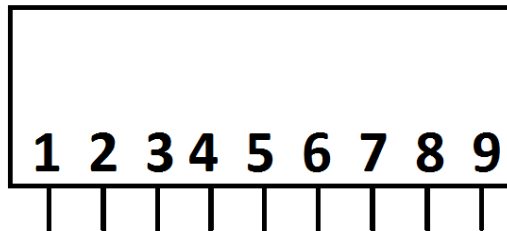
Pinout:

Figure 2: 9 Pin Male connector SM09B-SRSS-TB

1: Video output. See Quark documentation for formats.
2: GND
3: *MOSI,* PWM, digital I/O
4: 4.75 – 36VDC
5: *MISO,* PWM, digital I/O
6: *SCK,* PWM, digital I/O
7: RS-232 OUT, PWM, digital I/O
8: RS-232 IN, PWM, digital I/O
9: *RESET*

Function names in *italics* are for programming the microcontroller via SPI and not required by the end user. SPI control will be added in later revisions of the board.

The SAMTEC SS4-30-3.00-L-D-K-TR connector mates with the Quark. Most of the pins are unconnected- only power, ground, LVTTL Rx/Tx, and Video are used. The Quark pin out can be found at http://cvs.flir.com/quark-electrical-idd.