

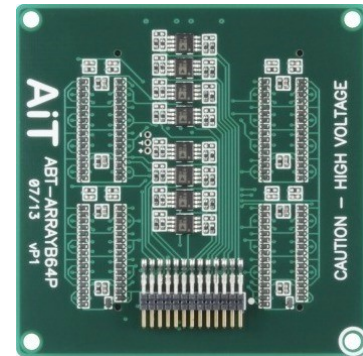
Summary

Features

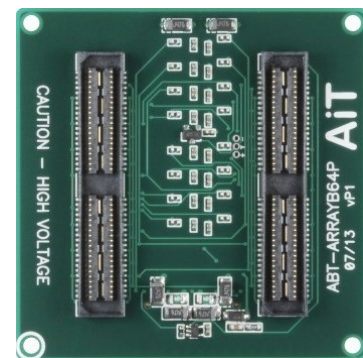
- Supports the SensL ArrayC-60035-64P-PCB 8x8 array of 6mm SiPMs
- Wideband amplifier per row and column, 16 total
- Patented diode-coupled readout, superior to traditional resistive readout
 - Improved spatial uniformity
 - Faster rise time
 - Reduced image noise
- < 20ns rise time
- DC-coupled signal path
- Low power consumption
- Precision temperature sensor
- SensL's dedicated fast output signals are not used

Mechanical

- Mounts within the perimeter of the SiPM array for 4-sided tileable installation
- 4 mounting holes supports #2 hardware
- 0.050" pitch signal connector uses low-profile micro IDC cable assemblies for versatile placement

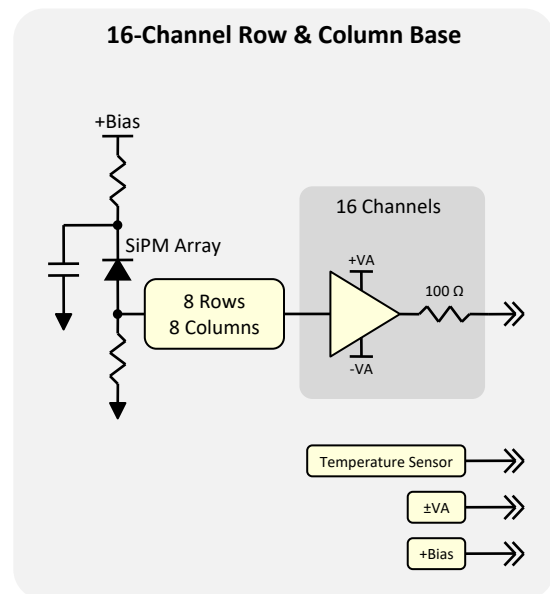


(Top View)



(Bottom View)

SiPM array not included



Specifications

Position Signal Output

Channels	16
Encoding	8 rows & 8 columns
Encoder gain	750Ω transimpedance gain (high-Z load)
Rise time	< 20 ns
Output voltage	0 → -1V (100Ω load)
Output impedance	100Ω
Output current	50mA max.

Temperature Sensor

Output voltage	500mV + 10mV per °C
Output current	10mA
Output impedance	100Ω
Accuracy	±0.5°C

Bias Voltage

+27.6V typical
(refer to manufacturer’s data)

Over-voltage clamp 47V Zener diode

Amplifier Voltage (±VA)

±2.8V typ.; ±5V max.

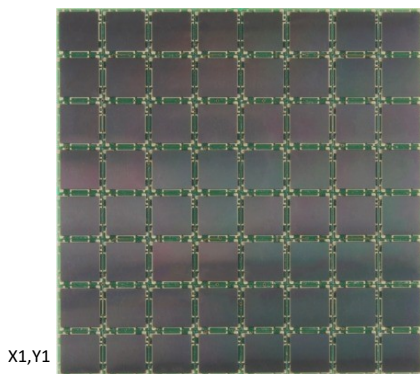
Current ±30mA typ.
(I_q, no signal, no load)

Signal Connector

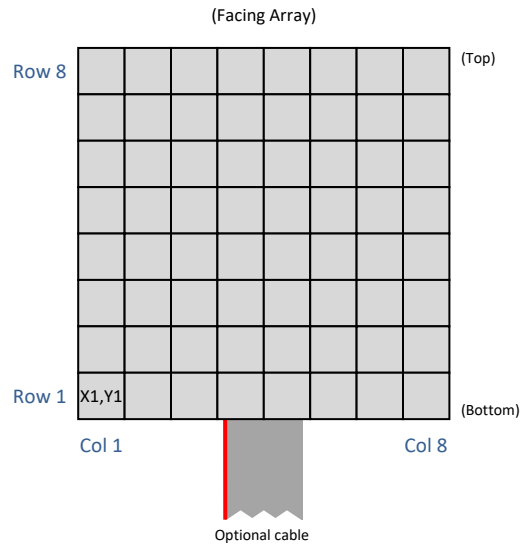
Right angle 26-pin 2-row header
0.050” pin pitch

Mating assembly Samtec FFSD-13-D-XX.XX-01-N
(XX.XX = length in inches)

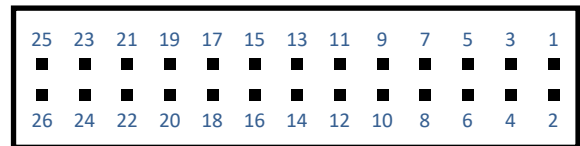
Array-64P



Array Channel Map



Signal Connector

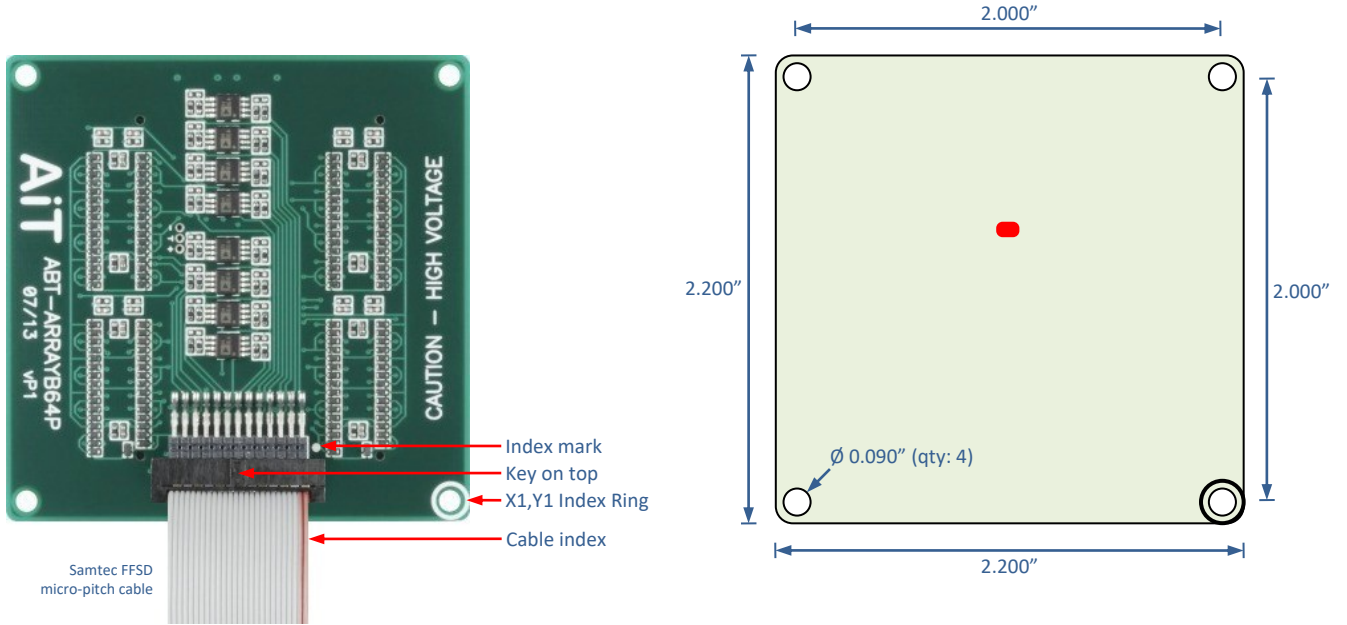


PCB Side View

Pin	Function	Pin	Function
1	Row 1	2	Temperature
3	Row 2	4	GND
5	Row 4	6	Row 3
7	Row 5	8	GND
9	Row 6	10	Row 7
11	Row 8	12	-VA
13	Column 1	14	GND
15	Column 2	16	+VA
17	Column 4	18	Column 3
19	Column 5	20	GND
21	Column 6	22	Column 7
23	Column 8	24	GND
25	+Bias	26	GND

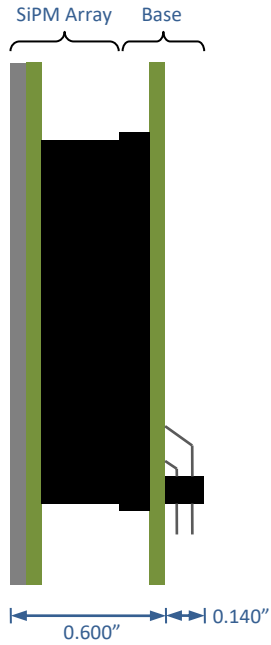
Mechanical

Top View

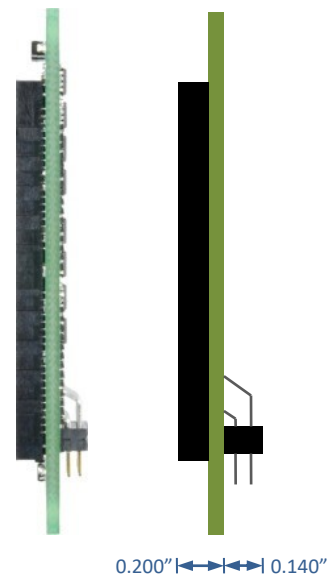


- Index mark
 - Key on top
 - X1,Y1 Index Ring
 - Cable index
- Samtec FFSD micro-pitch cable
- Approximate location of temperature sensor on bottom side of PCB
Measurement tolerance: ±0.020"

Side View, Base Attached to Array



Side View, Base Only



Safety Information



WARNING – High Voltage

- High voltage may be present during operation
- High voltage stored on capacitors may be present after power is removed
- Improper handling may result in personnel injury or equipment damage

This high-voltage device must be used only by personnel trained and qualified in safe handling, installation, and operation of high-voltage equipment.



CAUTION – Electrostatic Discharge (ESD) Sensitivity

The circuit board can be damaged by electrostatic discharge. Observe precautions for handling electrostatic sensitive devices. Handle only at static-safe workstations.

High-Gain Photodetectors

High-gain photodetectors such as silicon photomultipliers may conduct damaging currents if exposed to high optical signal levels while the bias voltage is applied, or if the bias voltage exceeds the recommended operating range. These devices must be operated only in low-light conditions, and only within the manufacturer's recommended bias voltage range.

Handling and Disassembly

This product may be provided with or without a protective enclosure. Disassembled enclosure components and circuit boards may contain sharp edges. Take appropriate safety precautions while assembling or disassembling the enclosure and handling disassembled components.

Indoor Use Only

Do not operate this product in a wet/damp environment. Do not operate in an explosive atmosphere.

Use of this product, and AiT Instruments' liability related to use of this product, is further governed by AiT Instruments' standard terms and conditions of sale, which were provided upon purchase of this product.