Rev. 1 - 10 January 2018

SP5650

SP5650 Sensor Holder for SP5600 Unit

CAEN
Tools for Discovery

User Manual
DS2628

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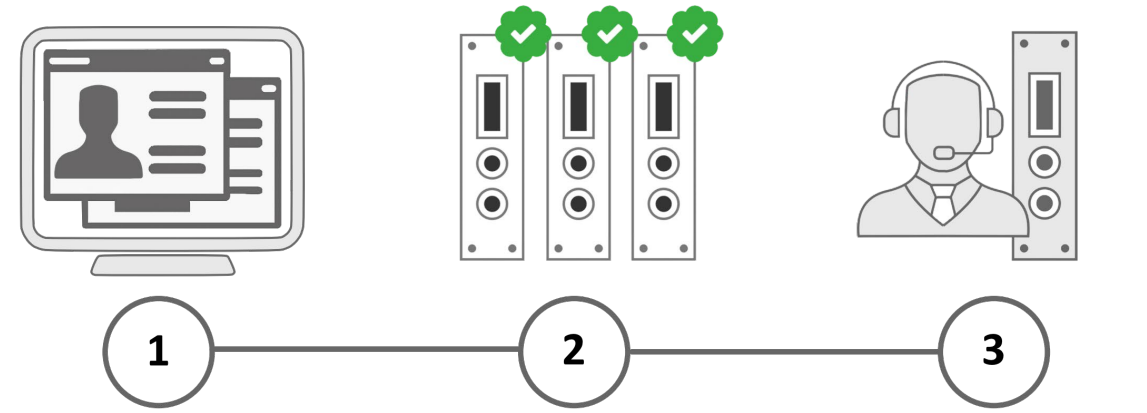

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Purpose of this Manual

This User's Manual contains the full description of the SP5650 Sensor Holder for SP5600 Unit.

Change Document Record

Date	Revision	Changes
25 November 2011	00	Initial release
10 January 2018	01	Completed revised layout and Updated Sensor

Symbols, abbreviated terms and notation

Not available

Reference Documents

Not available

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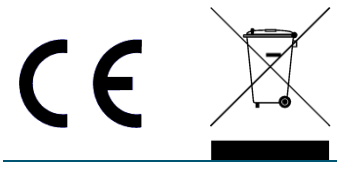
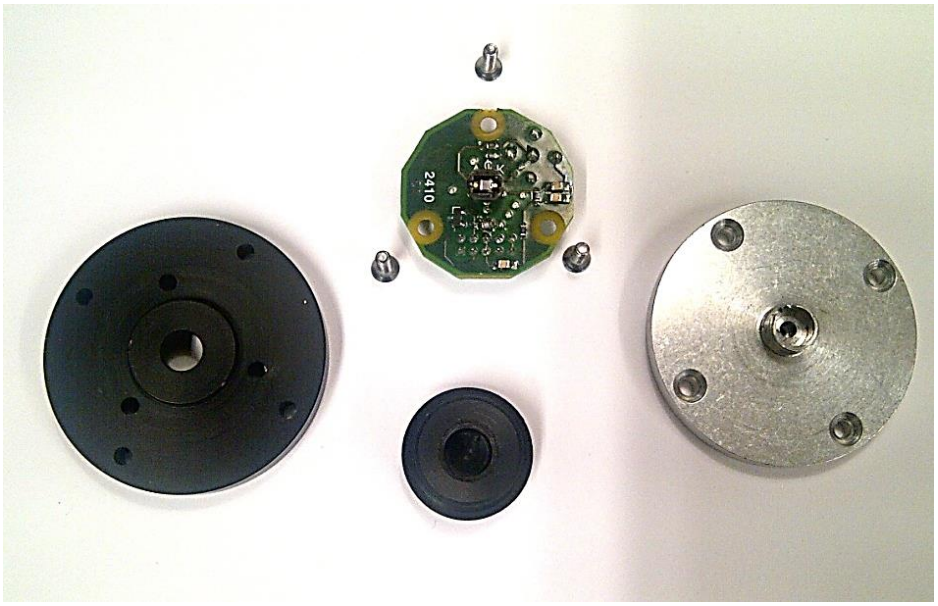
MADE IN ITALY: We stress the fact that all the boards are made in Italy because in this globalized world, where getting the lowest possible price for products sometimes translates into poor pay and working conditions for the people who make them, at least you know that who made your board was reasonably paid and worked in a safe environment. (this obviously applies only to the boards marked "MADE IN ITALY", we cannot attest to the manufacturing process of "third party" boards).



Overview

The SP5650 is the family of sensor holders provided in the Educational/Evaluation kits. The holders host a 1.3x1.3 mm^2 Silicon PhotoMultipliers; moreover, a probe inside the holder senses temperature variations, thus allowing the user to compensate for possible gain instability.
The SP5650 is made of a mechanical structure providing a FC fiber connector and a PCB where the SiPM is soldered.
Bias voltage for the SiPM and temperature probe output are provided through a 10 pin female socket, while the analog output connector is MCX.
The holders are designed to fit a large number of SiPM pin-outs and packages, allowing the user to either modify the mechanical structure and to solder different kinds of SiPMs choosing the preferred pads.



Mechanical Drawings

As stated above, SP5650 mechanical structure is made of two different parts: an aluminium external holder, providing the FC fiber connector and a 1 mm pin hole and an internal PVC holder, which provides the mechanical connection for the SP5600 front panel and houses the SiPM soldered in the PCB.
Thanks to this solution the user can easily modify the internal holder to fit different SiPM packages.

External aluminium holder mechanical drawings

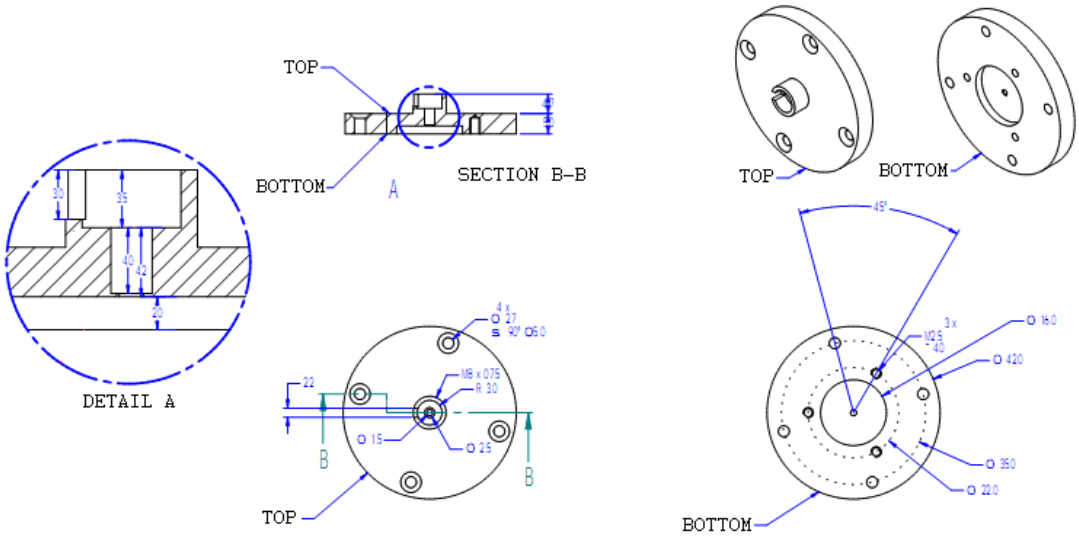


Fig.1: Mechanical drawings of SP5650 external holder

Fig.2: Front and Back view of the external aluminum holder

Internal PVC holder mechanical draw

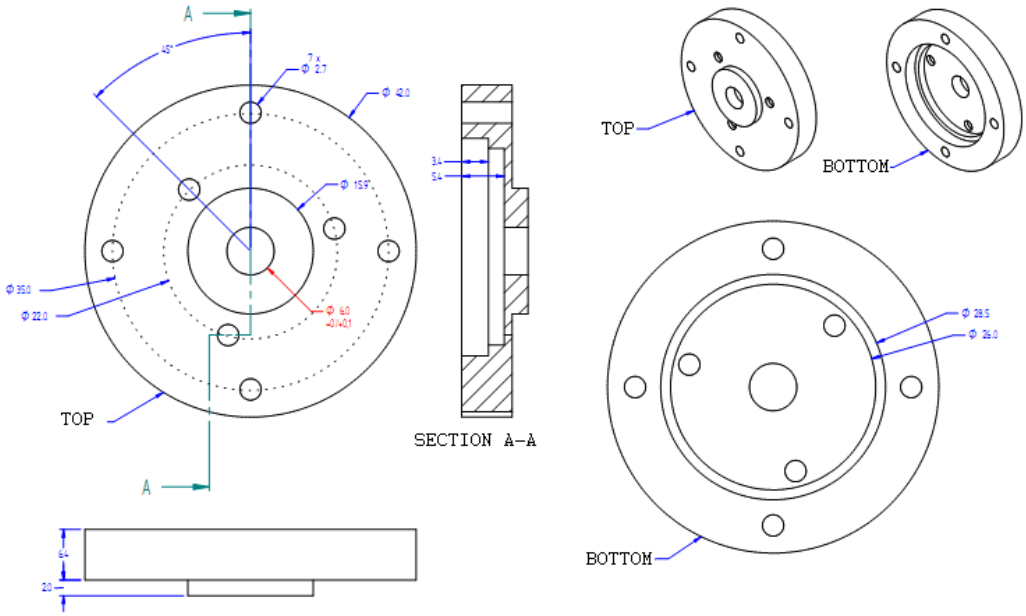


Fig.3: Mechanical drawings of SP5650 internal holder

Fig.4: Front and Back views of the internal PVC holder

Electrical Schemes

The PCB is designed to host the SiPM and the temperature probe. It is provided with different soldering pads for anode (A), cathode (K) and case (C) in order to fit the pin out of SiPM provided by different manufacturers.

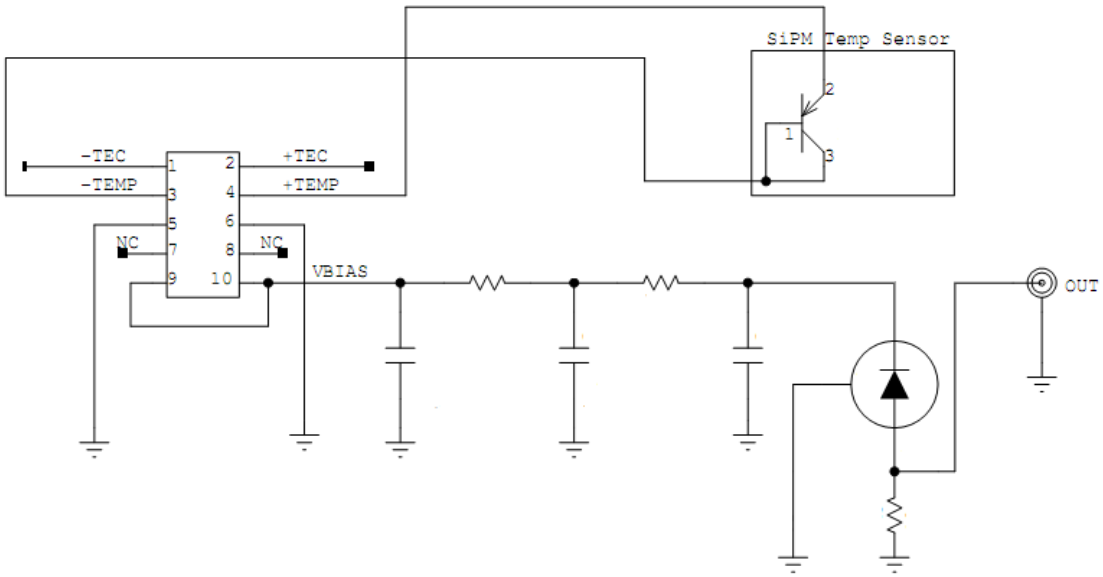


Fig.5: Electrical Scheme of SP5650 PCB

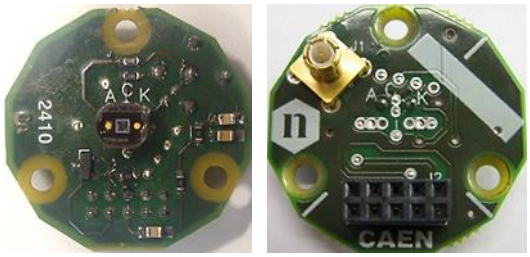


Fig.6: *Left*: front view of the SP5650 PCB. The 1x1 mm^2 SiPM is clearly noticeable. *Right*: back view of the SP5650 PCB

Technical specifications

Packaging	
Size	20 mm (diameter) x 6 mm (height)
Analog Out Connector	
RADIALL: R113425000 (MCX MALE)	
Bias Connector	
M22-7140542 Female Vertical Socket	
Ordering codes	
WSP5650XCAAA	with HAMAMATSU 1.3x1.3 mm^2 -50C
WSP5650XZAAA	with No Sensor

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