

Richiesta utilizzo servizi di Base

Anno 2017

Esperimento AUGER

AugerPrime 2018-2025

EM/ μ separation

- ❑ 4m² extruded plastic scintillator (1cm)
- ❑ WLS fibers 'U shape'
- ❑ PMT R9420

20bits Dyn. Range

- ❑ 4th SPMT
- ❑ PMT R8619 (1")
(M. Aglietta)

New Electronics

- ❑ 10 chs @120 Ms/s 12bits
- ❑ Dual μ -processor
ARM Cortex A9 333MHz
- ❑ M12M GPS (<4ns)
- ❑ LED flasher GPS syncr.

New H.V. Channel (SPMT &SSD)

- ❑ 2000V 100 μ A
- ❑ CAEN A7501P

(M. Aglietta)

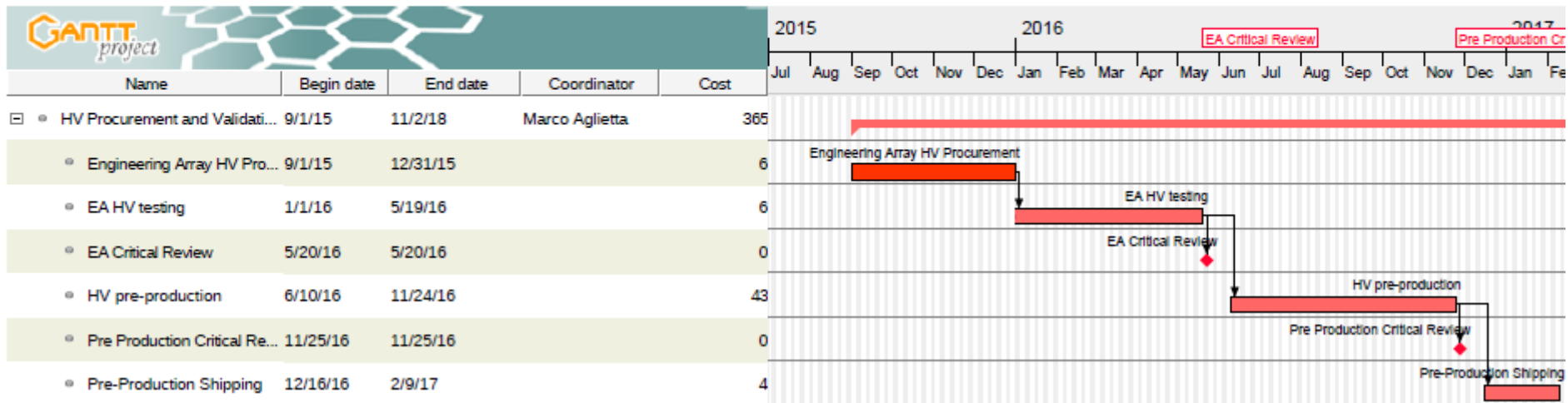
Auger Prime

Tasks HVs Procurement and Validation

Name	Begin date	End date	Coordinator	Cost
HV Procurement and Validation	9/1/15	11/2/18	Marco Aglietta	365.0
Engineering Array HV Procurement	9/1/15	12/31/15		6.0
EA HV testing	1/1/16	5/19/16		6.0
EA Critical Review	5/20/16	5/20/16		0
HV pre-production	6/10/16	11/24/16		43.0
Pre Production Critical Review	11/25/16	11/25/16		0
Pre-Production Shipping	12/16/16	2/9/17		4.0
HV First Run Production	1/2/17	9/8/17		145.0
First Run shipping	9/11/17	11/3/17		8.0
HV Second Run Production	1/1/18	9/7/18		145.0
Second Run Shipping	9/10/18	11/2/18		8.0

Auger Prime

Gantt Chart



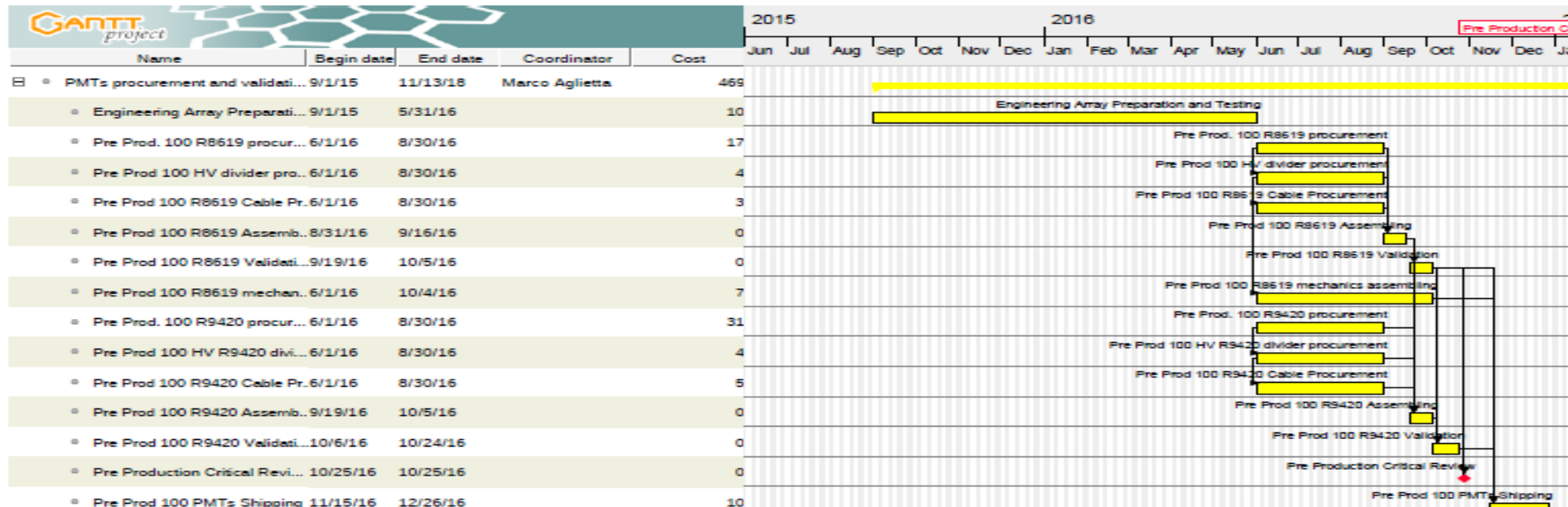
Auger Prime

Tasks PMTs Procurement and Validation

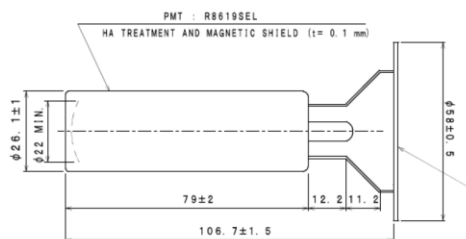
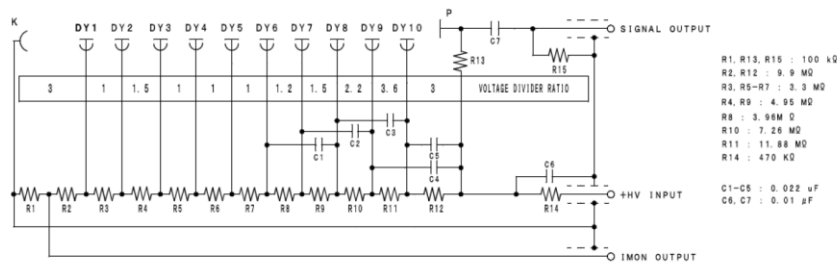
Name	Begin date	End date	Coordinator	Cost
PMTs procurement and validation	9/1/15	11/13/18	Marco Aglietta	469.0
Engineering Array Preparation and Testing	9/1/15	5/31/16		10.0
Pre Prod. 100 R8619 procurement	6/1/16	8/30/16		17.0
Pre Prod 100 HV divider procurement	6/1/16	8/30/16		4.0
Pre Prod 100 R8619 Cable Procurement	6/1/16	8/30/16		3.0
Pre Prod 100 R8619 Assembling	8/31/16	9/16/16		0
<i>Assembling speed 8 pieces per day</i>				
Pre Prod 100 R8619 Validation	9/19/16	10/5/16		0
<i>validation speed 8 PMTs per day</i>				
Pre Prod 100 R8619 mechanics assembling	6/1/16	10/4/16		7.0

Auger Prime

Gantt Chart



This information is furnished for your information only.
No warranty, expressed or implied, is created by furnishing this information.



VOLTAGE DIVIDER CURRENT
= +22.5 μA at +1500 V (MAX) INPUT

PCB WITH INFN TORINO DIVIDER

CAEN Electronic Instrumentation

4 Appendix

Box for A7501 (Auger experiment)

This appendix describes the Box for A7501 (Mod. A7501PB) developed for Auger experiment³. The HV outputs is delivered through LEMO HV connector located on the front panel. The module can be controlled via 4-pin Mini XLR Connector (Amphenol - G-Type Miniature XLR - Part Number: AG4MCC).

R8619SEL-10 MOD3 DIMENSIONAL OUTLINE AND VOLTAGE DIVIDER CIRCUIT

HAMAMATSU
PHOTON IS OUR BUSINESS



Fig. 4.1: A7501PB Front panel, LEMO HV and 4-pin Mini XLR connectors for Auger IMON and temperature remote inputs



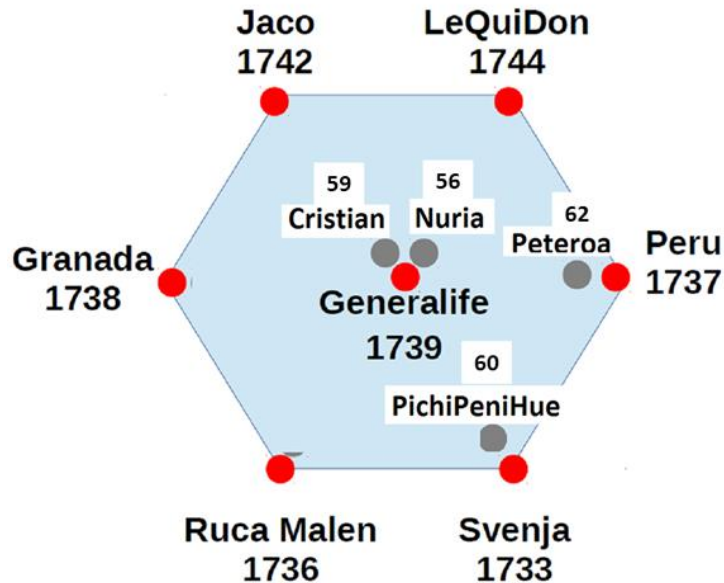
Fig. 4.2: A7501PB Back panel with DB15 connector



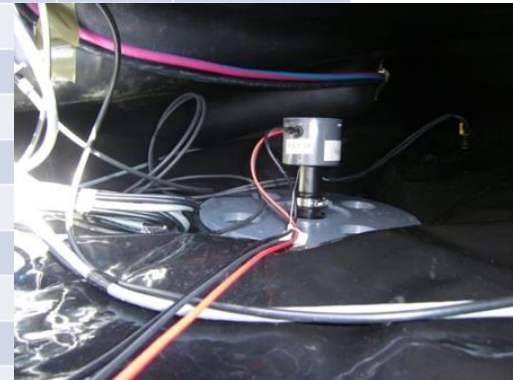
Fig. 4.3: Mod. A7501PB connector pin description

Engineering Array : da completare entro Nov. 2016

(SPMTs già installati a Maggio)



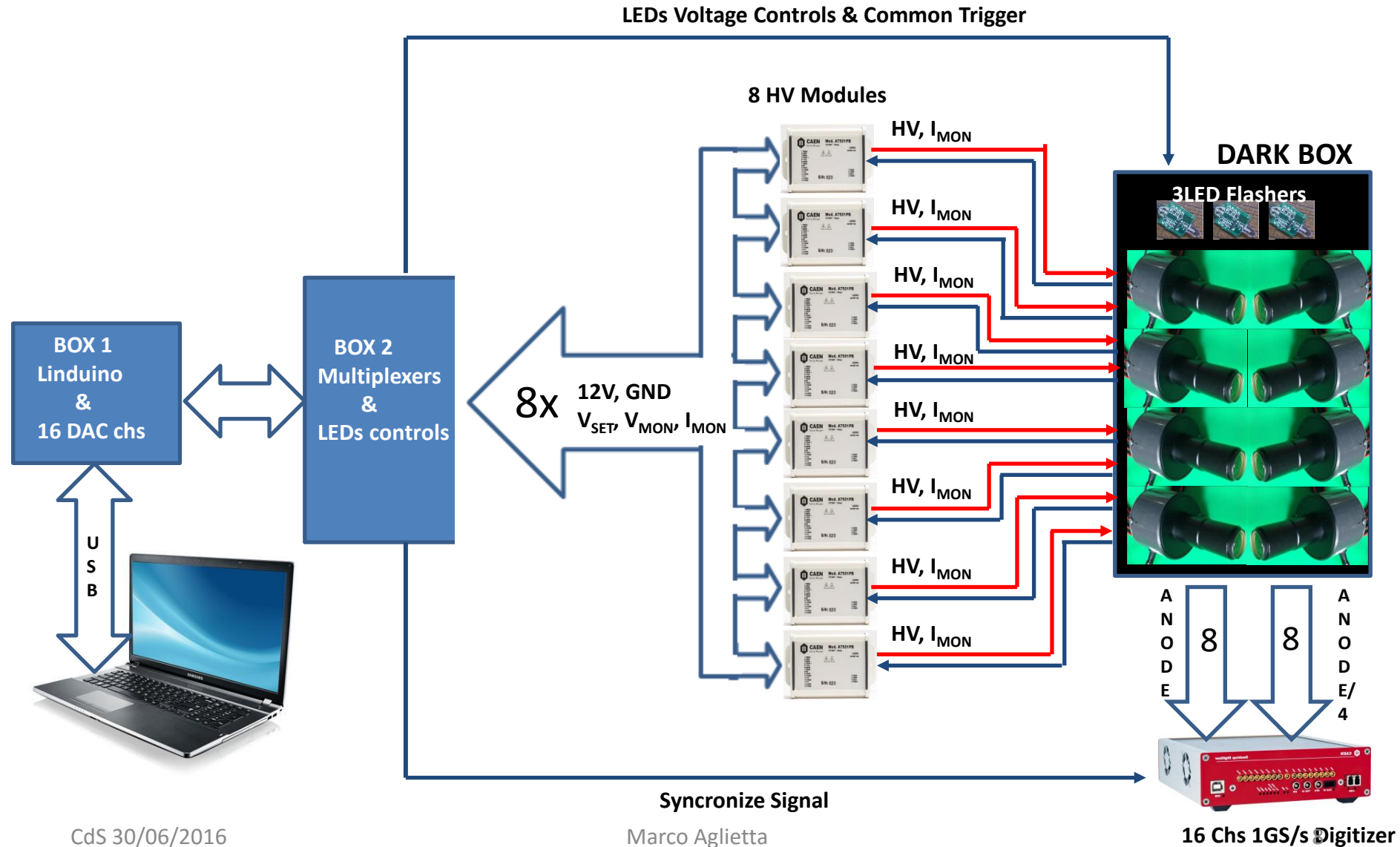
Tank	SPMT Model	S/N	HV [V]	R _{LED}	R _{small Shower}
Jaco	R8619Sel-10	RW5734	1122	30	22.9
LeQuiDon	R8619Sel-2	RX9564	1035		
Peru	ET9107B	73289	1014		
Peteroa	ET9107B	73310	980		
Svenja	R8619Sel-2	RW5585	1040		
PichiPiniHue	R6094	RJ1412	1060		
Ruca Malen	R8619Sel-2	RX3887	1140		
Granada	R6094	RJ1578	1049		
Generalife					
Cristian	R8619Sel	RU7647	1049	33.2	27
Nuria	R8619Sel-2	RW5738	1049	32.5	
Infill	R8619Sel-10	RW5732			



Nel 2017 inizia la pre-produzione (100 stazioni)

Richieste per 2017

Progettazione e realizzazione controllo per sistema di test SPMT (in coll. con UNICAMP - BRA). Silvano Gallian





DEMO MANUAL DC2026A

Linduino One Isolated Arduino-Compatible Demonstration Board

DESCRIPTION

Linear Technology's DC2026 (called the Linduino™ One) is compatible with the Arduino Uno microcontroller board. Arduino hardware consists of an Atmel microcontroller with a bootloader allowing quick in-circuit firmware updates. The software is a simple programming environment based on the AVRGCC compiler. This platform is popular because it is easy to use, both the hardware and software are open source, and it can be programmed in C. We find it an ideal way to demonstrate and distribute libraries for integrated circuits that have digital interfaces such as Inter-Integrated Circuit (I²C) and Serial Peripheral Interface (SPI). While the Linduino One is Arduino-compatible, it is not produced by the official Arduino team, and they do not receive any monetary support from this board. Please, consider supporting them by purchasing other items from: <http://store.arduino.cc>

The Linduino One adds several features to the standard Arduino Uno board:

- A 14-pin QuikEval™ connector provides a direct connection to a growing list of hundreds of Linear Technology demo boards, including ADCs, DACs, Power System Management, RF Synthesizers, System Monitor and Control, and many others.
- An LTM[®]2884 provides galvanic isolation of USB data and power for both safety and noise rejection.
- Auxiliary 7V to 20V power input on isolated side, with conversion to 5V provided by an LTM[®]3973 allowing high power operation up to 750mA.

Design files for this circuit board are available at <http://www.linear.com/demo>

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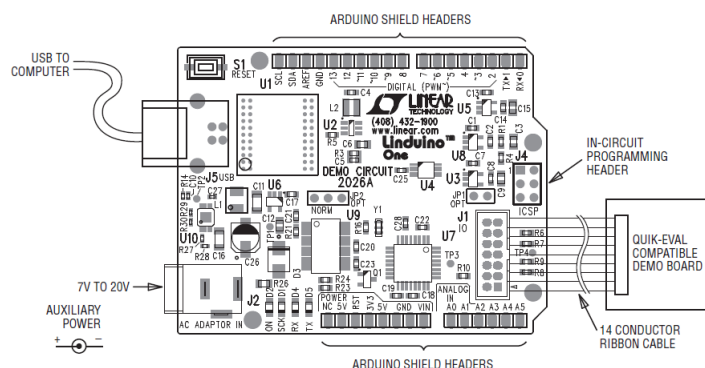


Figure 1. Linduino One Basic Connections



DEMO MANUAL DC2025A

16-Channel 16-Bit/12-Bit ±10V V_{OUT} SoftSpan DACs with 10ppm/°C Max Reference

DESCRIPTION

Demonstration circuit 2025A features the LTC2668, 16-channel 16-Bit/12-Bit ±10V V_{OUT} SoftSpan™ DACs with 10ppm/°C max reference in a 6mm × 6mm QFN package. This device features per-channel SoftSpan configuration with five output ranges: 0V to 5V, 0V to 10V, ±2.5V, ±5V, and ±10V. A toggle feature allows any or all DACs to switch between two programmed codes via a single SPI command or by the TGP input pin. The versatile SPI interface can operate on any logic level between 1.71V and 5.5V, for easy interface to lower voltage microcontrollers or FPGAs.

DC2025A-A is populated with the 16-bit version of the LTC2668. DC2025A-B is populated with the 12-bit version for lower resolution applications.

Design files for this circuit board are available at <http://www.linear.com/demo/DC2025A>

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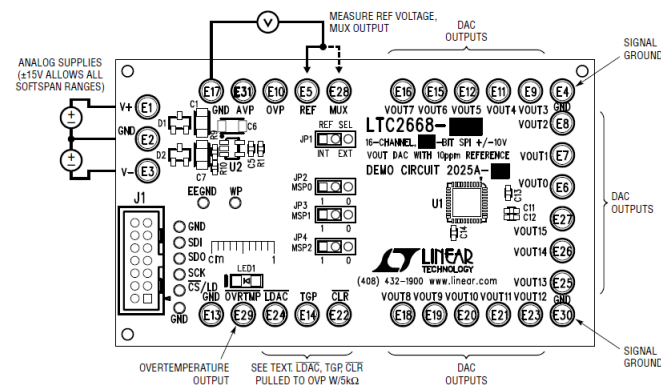
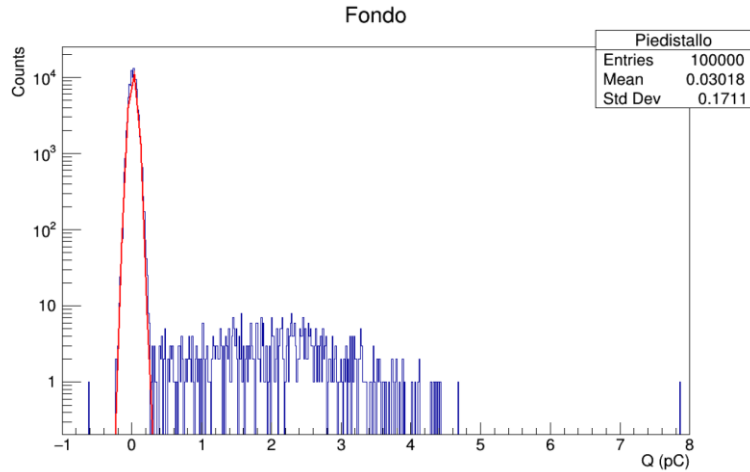
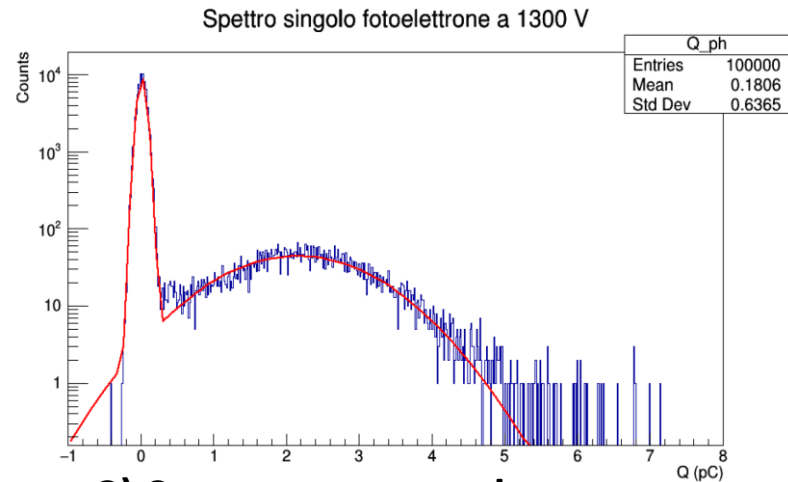


Figure 1. Connection Diagram

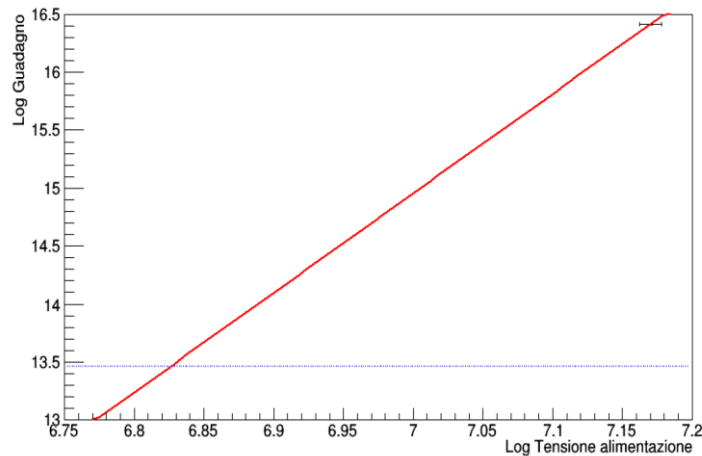
Parametri PMT misurati



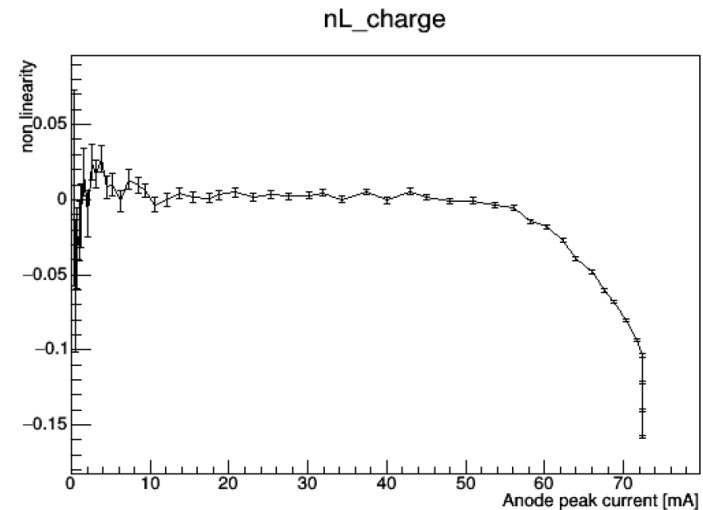
1) Spettro di fondo: dark rate



2) Spettro s.e. : guadagno



**3) Gain vs
HV**

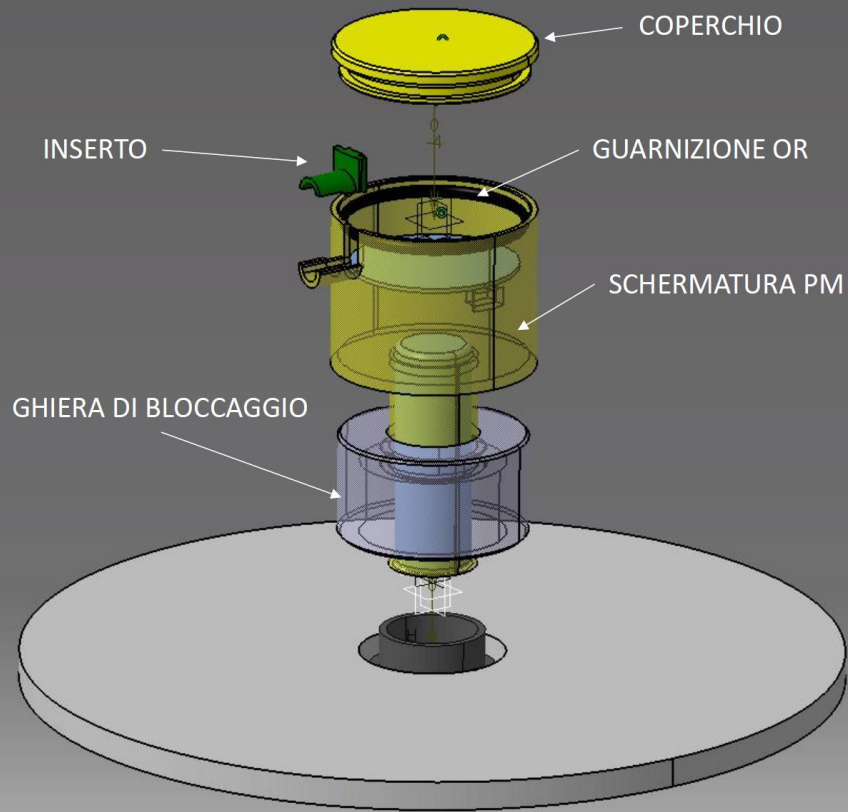


4) Range lineare

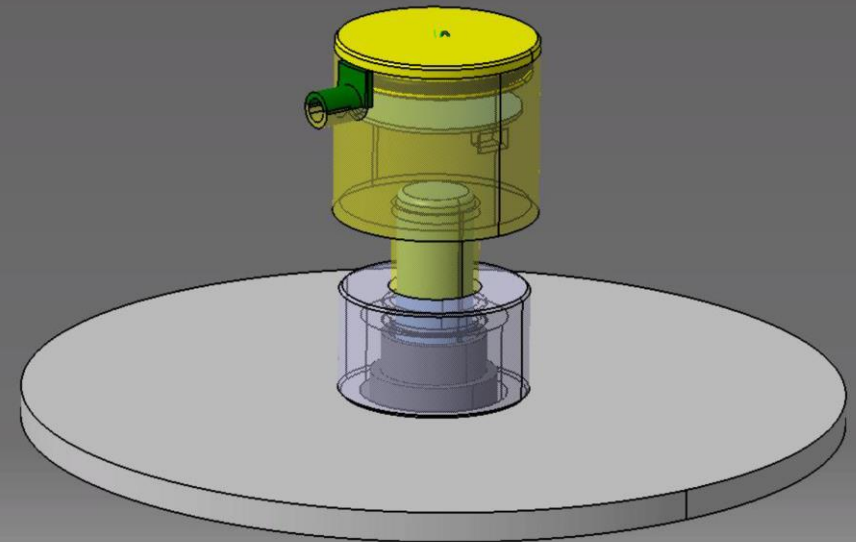
SDE maintenance (Antonio Zampieri)



Progettazione supporto meccanico per SPMT (Beppe Giraud)



RISULTATO FINALE



DOMANDA DI UTILIZZO DEI SERVIZI DI BASE

Data della richiesta: Lab. ☐ Tecnologico ☐ Lab. ☒ Elettronica ☐ Centro di ☐ Calcolo ☐

nuova richiesta ☒
richiesta di continuazione ☒

Esperimento: **Pierre Auger** Responsabile locale **Antonella Castellina**
Responsabile dell'attività **Marco Aglietta**

Descrizione dettagliata dell'attività richiesta

1) Nuova attività

Progettazione, realizzazione e messa in opera di un sistema di test per la caratterizzazione dei fotomoltiplicatori di AugerPrime (upgrade del Pierre Auger Observatory) dedicati alla estensione del range dinamico prima della loro installazione in campo. Il sistema di test misura dark rate, s.e., curva di guadagno e linearità di 8 fotomoltiplicatori in parallelo. Lo sviluppo del sistema verrà condotto in collaborazione con l'Università di Campinas che avrà la responsabilità di condurre le misure di caratterizzazione per i PMT acquistati dal Brasile.

2) Continuazione di attività

Supporto alla attività di 'maintenance' dei fotomoltiplicatori di Auger SD. Missioni in loco.

PLANNING													MILESTONES	
Subattività'	G	F	M	A	M	G	L	A	S	O	N	D	Data-mese	Descrizione
Test SPMT		✓	✓										28 Feb	Progettazione del sistema di test
Manutenzione				✓						✓				
													31 Mar	Messa in opera sistema di test
													15 Apr	Manutenzione elettronica in loco
													15 Ott	Manutenzione elettronica in loco

Tecnici e tecnologi attualmente assegnati all'attività					Richieste di supporto tecnico per		
INFN		ALTRI ENTI			l'anno:		
Nome	mesi/U	Ente	Nome	mesi/U	Tipologia	N.	mesi/U
Silvano Gallian	2	INAF	Alessio Gorgi	5	Tecnici mecc. /elettr/CdC	2	3
Antonio Zampieri	1				Disegnatori meccanici		
					Microsaldatori		
					Tecnologi progett. mecc.		
					Tecnologi elettronici/CdC		
					Tecnologi microelettronica		

DOMANDA DI UTILIZZO DEI SERVIZI DI BASE

Data della richiesta:

Lab. Tecnologico	☒	Lab. Elettronica	☐	Centro di Calcolo	☐
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nuova richiesta	☐
richiesta di continuazione	☒

Esperimento:

Pierre Auger

Responsabile locale

Antonella Castellina

Responsabile dell'attività

Marco Aglietta

Descrizione dettagliata dell'attività richiesta

Continuazione di attività

Progettazione e realizzazione prototipi della meccanica di protezione e supporto per i fotomoltiplicatori di piccolo diametro dedicati alla estensione del range dinamico di misura dei detector di superficie di AugerPrime (upgrade del Pierre Auger Observatory)

PLANNING													MILESTONES	
Subattività'	G	F	M	A	M	G	L	A	S	O	N	D	Data-mese	Descrizione
Realiz. mecca		✓	✓										28 Feb	Progettazione
													31 Mar	Realizzazione prototipi

Tecnici e tecnologi attualmente assegnati all'attività					Richieste di supporto tecnico per		
INFN		ALTRI ENTI			l'anno:		
Nome	mesi/U	Ente	Nome	mesi/U	Tipologia	N.	mesi/U
Beppe Giraudo	1	INAF	Alessio Gorgi	2	Tecnici mecc. /elettr/CdC	1	1
					Disegnatori meccanici		
					Microsaldatori		
					Tecnologi progett. mecc.		
					Tecnologi elettronici/CdC		
					Tecnologi microelettronica		