



Dune-ND

ArgonCube 2x2

Light VME Crate Options

Linda Bagby

2x2 Electronics Integration

Nov. 3, 2022

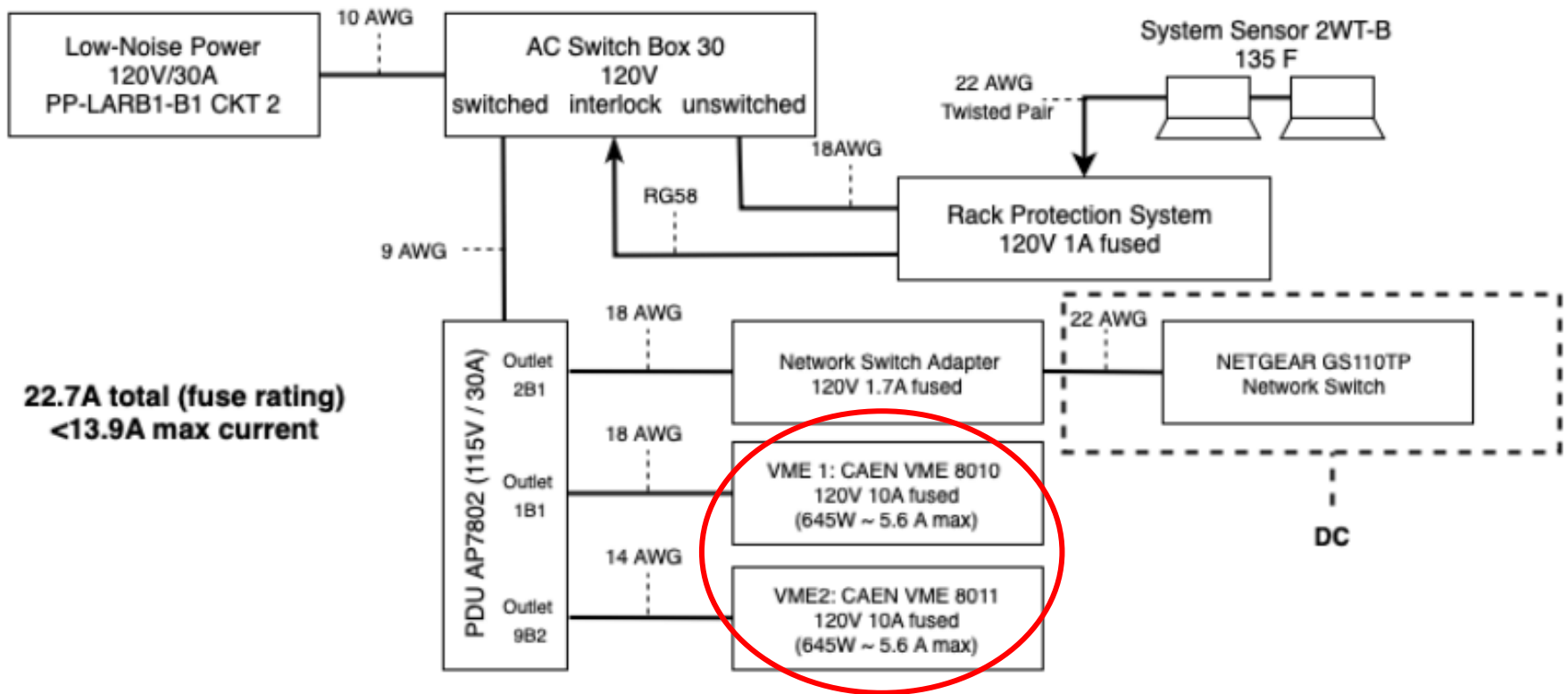


Outline

- Current rack build
- VME Crate requirements
- Quotes in hand
- Plans

Current Rack Build (DocDB #26325)

- LArTF uses repurposed Minerva VME crates



Light VME power requirements

- VME64 8010 and 8011

| | |
|---------------------|---|
| Output power | 60 A @ +5 V, 6 A @ -12 V, 8.9 A @ +12 V |
|---------------------|---|

| Full 2x2 setup | | | | | |
|--------------------|-------------------|---------------------------------|-----------|-------------|------------|
| Crate | Rail | +5V | -12V | +12V | |
| Crate VGA A | VGA I | | 4 | 1.5 | - |
| CAEN 8010 | VGA II | | 4 | 1.5 | - |
| | VGA III | | 4 | 1.5 | - |
| | VGA IV | | 4 | 1.5 | - |
| | VGA V | | 4 | 1.5 | - |
| | VGA VI | | 4 | 1.5 | - |
| | VGA VII | | 4 | 1.5 | - |
| | VGA VIII | | 4 | 1.5 | - |
| | SiPM bias PS I | | 0.75 | - | - |
| | SiPM bias PS II | | 0.75 | - | - |
| | VGA ctrl | | 2.5 | 0.5 | 0.5 |
| | SiPM bias PS ctrl | Does not require power from VME | | | |
| TOTAL | | | 36 | 12.5 | 0.5 |

Requirements

- VME64, 6U, 21 slots, J1/J2
- +5V/~40A, -12V/~15A, +12V/~2A
- Noise: <30mVpp, Ripple: <30mVrms
- Ethernet remote control
- Cooling fan
- Fan intake filter
- rtd temperature monitoring, slots 1, 11, 21.
- Top crate cover

Requirements comparison w/details

| Requirements | CAEN: VME8100/00 | WIENER: 6021-611 | WIENER: 6023-611 |
|-------------------------------|----------------------|-----------------------------|-----------------------------|
| VME64, 6U, J1/J2 | X | X | X |
| +5V/40A,-12V/15A, +12V/2A | +5V/110A, +/-12V/20A | +5V/115A, +/-12V/23A | +5V/115A, +/-12V/23A |
| noise +5V: <30mVpp | <10mVpp | <10mVpp (<3mVpp) (0-20MHZ) | <10mVpp (<3mVpp) (0-20MHZ) |
| noise +/-12V: <30mVpp | <10mVpp | <15mVpp (<10mVpp) (0-20MHZ) | <15mVpp (<10mVpp) (0-20MHZ) |
| ripple +5V: <30mVrms | <1mVrms | <2mVrms (0-30MHZ) | <2mVrms (0-30MHZ) |
| ripple +/- 12V: <30mVrms | <2mVrms | <2mVrms (0-30MHZ) | <2mVrms (0-30MHZ) |
| Ethernet remote control | X | X | X |
| Cooling fan | X | X | X |
| Fan intake filter | X | option | option |
| rtd monitoring Slot 1, 11, 21 | over temp on PS | option | option |
| Top crate cover | yes | option | option |
| Height | 8U | 8U | 9U |
| NRTL | | EN60950, UL1950 | EN60950, UL1950 |
| BP floating gnd option | | X | X |
| AC power | 120V/16A | H: 120V/16A rated | H: 120V/16A rated |
| delivery | 8 wks ARO | 8-12 wks ARO | 8-12 wks ARO |

Preliminary quotes

- Wiener: \$18,218

- CAEN: \$17,327



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OFFER #:

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Date: 9/20/2022



On the Edge of Discovery

QUOTATION

Our Reference: QUO133536
Date of Quotation: September 14, 2022



From: CAEN Technologies Inc.
1 Edgewater Street - Suite 101
Staten Island, NY 10305

To: Fermilab - Fermi National Accelerator Laboratory
PO BOX 500
BATAVIA, 60510-5011
USA

Phone: (718) 981-0401
Email: sales@caentechnologies.com

Attn: Dr. Linda Bagby

| Qty | Item | Description | Price | Total |
|-----|---|---|------------|-------------|
| 2 | VME6021-611 | VME6021-611:VME64 crate;8U;21slots J1/J2;6U/160mm;fan; 3KW;+5V 115A;/+/-12V 23A;input 100...265VAC : VI3LH6X11R1J | \$8,678.00 | \$17,356.00 |
| 2 | VME6023-611 | VME6023-611:VME64 crate;9U;21slots J1/J2;6U/160mm;fan; 3KW;+5V 115A;/+/-12V 23A;input 100...265VAC : VJ3LI6X11R1J | \$8,682.00 | \$17,364.00 |
| 2 | VME64 6021/6023 air filter option | VME64 6021/6023 air filter option:0.5 U air filter;bottom air intake;also for retrofit;: 0 | \$115.00 | \$230.00 |
| 6 | VME64 6021/6023 temperature sensor | VME64 6021/6023 temperature sensor:for all VME6000 series Crates;: slots 1, 11 and 21 | \$104.00 | \$624.00 |

| Item | Product code | Description | U. P. | Qty. | Disc. % | Subtot. |
|--------------|--------------|--|-------------|------|---------|---------------------|
| 1 | WV8100VME00 | VME8100/00 - VME64 8U crate, 21 slot J1/J2, smartfan unit, (5V 110A, ±12V 20A) | \$ 9,845.00 | 2.00 | 12.00 | \$ 17,327.20 |
| Total | | | | | | \$ 17,327.20 |

Plans

- Update requirements—check power
- Update quotes
- Place order
- Prepare rack for 208V/3-phase/30A AC Switch Box + PDU