Fermi National Accelerator Laboratory

The Tevatron Beam Loss Monitoring System

VME Base Address Switch Settings for the BLM System

-- PRELIMINARY --

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Version 1.1

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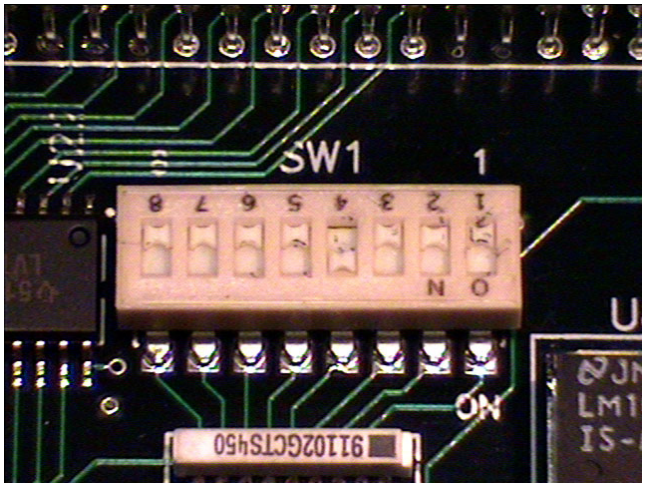
BLM System - VME Base Address Switch Settings

Introduction

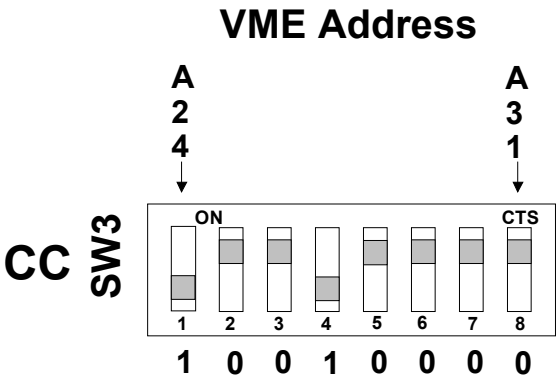
This document is intended as a quick guide to setting up the VME base address for each of the cards (High Voltage, Controller, Timing, Abort, and Digitizer) in the Fermilab BLM system. Each card in the BLM system has a 7 or 8 segment DIP switch that controls the VME address range the card will respond to. To make it easier to find and set the switch values for each card, a photo of the DIP switch is shown, along with a graphic to indicate the current logic state of the switch setting. An explanation of the setting, and the VME address bit each switch segment corresponds to is also included.

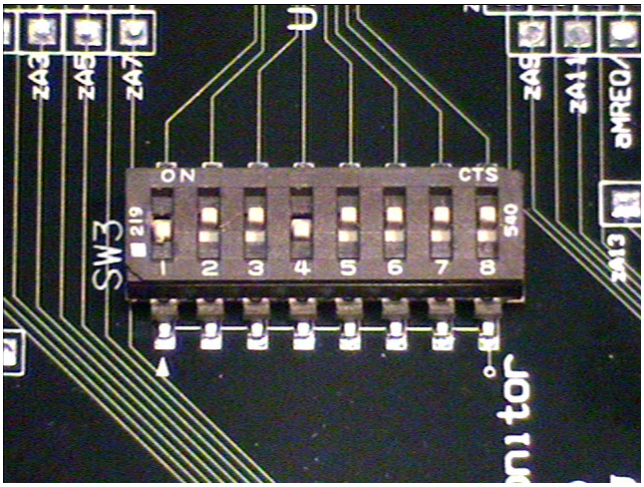
BLM High Voltage Card VME Address Switch Settings



This switch setting represents VME base address 0x0800 0000 for the HV Card. On the HV card the logic state represented by a switch setting is inverted inside the FPGA. Moving a switch to the "ON" position shorts that bit to ground, but this represents a 1 in the VME address. In the "OFF" position the switch is open and the bit is pulled to a logic 1 by a resistor, this corresponds to a 0 in the address. DIP switch position 8 corresponds to VME address line A31, position 7 to A30, position 6 to A29, etc.

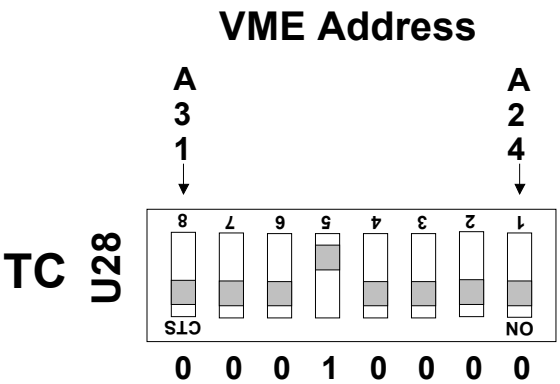
BLM Controller Card VME Address Switch Settings

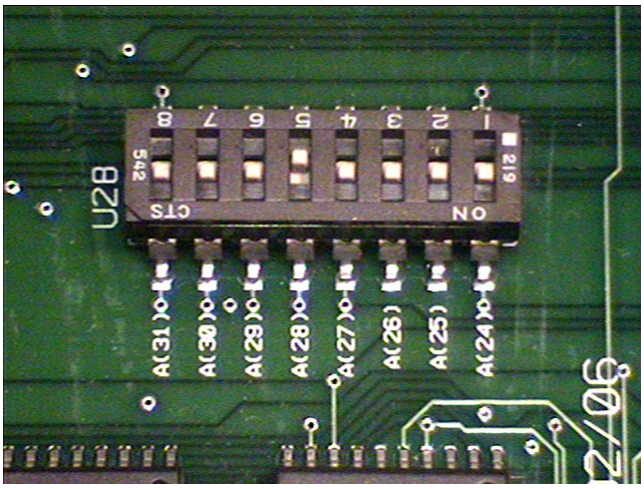




This switch setting represents VME base address 0x0900 0000 for the CC Card. Moving a switch to the "ON" position connects that bit position to ground, representing a logic 0 on the address decoder chip. In the "OFF" position the switch is open and the bit is pulled to a logic 1 by a resistor in the decoder chip (74ACT520).

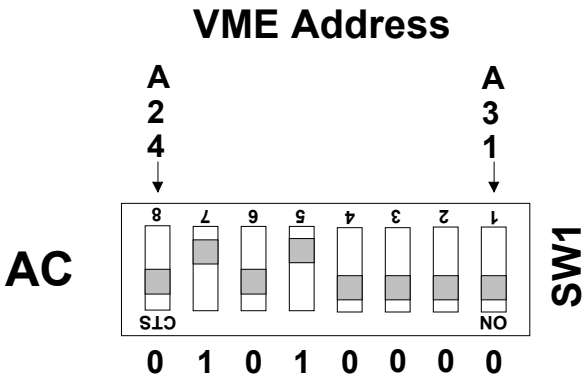
BLM Timing Card VME Address Switch Settings

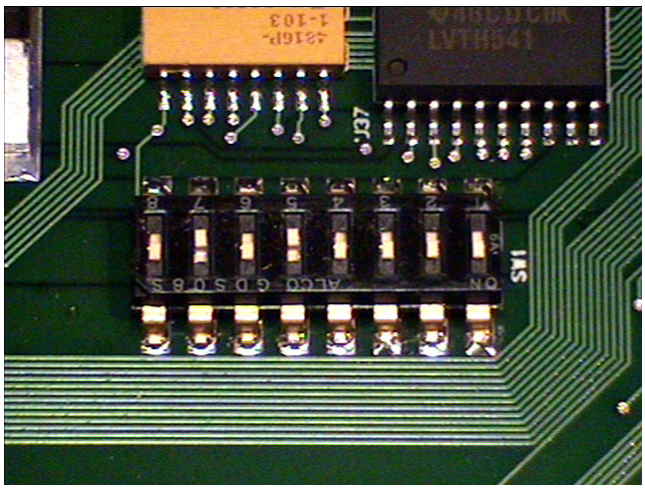




This switch setting represents VME base address 0x1000 0000 for the TC Card. Moving a switch to the "ON" position connects that bit position to ground, representing a logic 0 on the address decoder chip. In the "OFF" position the switch is open and the bit is pulled to a logic 1 by a resistor in the decoder chip (74ACT520). The VME address lines that the switches correspond to are shown on the silkscreen.

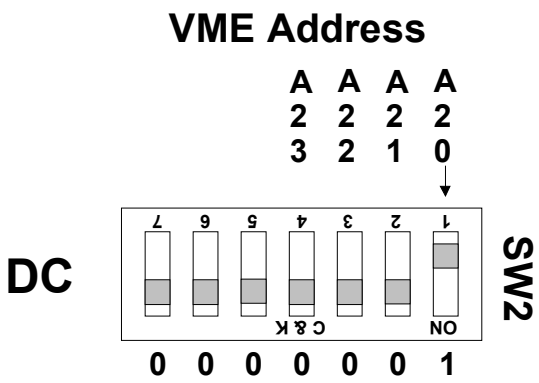
BLM Abort Card VME Address Switch Settings

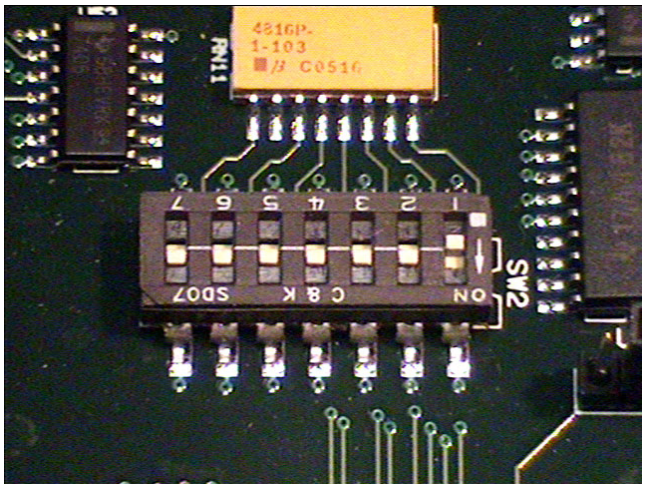




This switch setting represents VME base address 0x0A00 0000 for the AC Card. Moving a switch to the "ON" position connects that bit position to ground, representing a logic 0 on the address decoder chip (74LS688). In the "OFF" position the switch is open and the bit is pulled to a logic 1 by a resistor pack on the PC board. Switch position 1 corresponds to VME address line A31, position 2 to A30, etc.

BLM Digitizer Card VME Address Switch Settings





This switch setting represents VME base address 0x0010 0000 for the DC Card. Moving a switch to the "ON" position shorts that bit position to ground, representing a logic 0 for the FPGA decoding logic. In the "OFF" position the switch is open and the bit is pulled to a logic 1 by a resistor pack on the PC board. Only switch positions 1, 2, 3, and 4 are used to set the VME base address, with switch 4 corresponding to A23, switch 3 to A22, etc. Switches 5, 6, and 7 set other operating modes of the Digitizer card.

BLM System VME Bus Base Address Maps

As of June 2006

BLM System "In Field" Address Map

High Voltage Card	0800 0000	32-Bit VME Address
Controller Card	0980 0000	32-Bit VME Address
Timing Card	1000 0000	32-Bit VME Address
Abort Card	0A00 0000	32-Bit VME Address
Digitizer Cards	xx00 0000	24-Bit VME Address
Digitizer Cards	xx10 0000	24-Bit VME Address
Digitizer Cards	xx20 0000	24-Bit VME Address
Etc….		

BLM System Test Stand Address Map

High Voltage Card	3000 0000	32-Bit VME Address
Controller Card	0980 0000	32-Bit VME Address
Timing Card	1000 0000	32-Bit VME Address
Abort Card	0300 0000	32-Bit VME Address
Digitizer Cards	xx00 0000	24-Bit VME Address
Digitizer Cards	xx10 0000	24-Bit VME Address
Digitizer Cards	xx20 0000	24-Bit VME Address
Etc….		

Revisions

Version 1.0 - July 14, 2006 - First Draft

Version 1.1 - July 24, 2006 - Corrected error in AC card switch setting drawing.