The STAR DAQ Global Crate Address Space Architecture and Interrupt Assignment

Version: **2.01** (Rev. 18)
Date: **03/04/98 11:41 AM**
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Versions

2.0 First real version
2.01 Changed VME interrupt vectors

Introduction

This document assigns the relevant address, interrupt levels and vectors for the Global Crate (GC)

Interrupts

Name	CPU#	Handler VME IRQ level	Interrupter VME IRQ level	VME IRQ vector	Reserved from top of memory
GL3 TM	0	5 6	 7	0x80	8 kB
EVB 1	1	4		0x82	8 kB
EVB 2	2	1		0x84	8 kB
TRG	3	7	6	0x86	8 kB
ROSEBUD	-	-	7	0xF0	-
VMEAuto	-	-	2	0xFE	-

VME A32 Map of the Global Crate

Name	VME Address	Comment
EVB1c	1000.0000-1000.1FFF	8 kB control space
EVB2c	1001.0000-1001.1FFF	8 kB control space
GL3c	1002.0000-1002.1FFF	8 kB control space
TRGc	1003.0000-1003.1FFF	8 kB control space
EVB_1_256	2000.0000-3000.0000	256 MB of data memory
EVB_2_256	3000.0000-4000.0000	256 MB of data memory
TRG_256	4000.0000-5000.0000	256 MB of data memory
SCI	5000.0000-7000.0000	512 MB of SCI via GL3 as the bridge
ROSEBUD	A000.0000-A100.0000	32 MB - temporary

Event Builder 1 - Main

	CPU		PCI			VME/SCI	
DRAM	0000.0000-0200.0000	←	0000.0000-0200.0000	mem	←	x	x
EVB1c	01FF.E000-0200.000	←	01FF.E000-0200.000	mem	←	1000.0000-1000.2000	A32
EVB2c	1001.0000-1001.2000	→	1001.0000-1001.2000	mem	→	1001.0000-1001.2000	A32
GL3c	1002.0000-1002.2000	→	1002.0000-1002.2000	mem	→	1002.0000-1002.2000	A32
TRGc	1003.0000-1003.2000	→	1003.0000-1003.2000	mem	→	1003.0000-1003.2000	A32
EVB_1_256	2000.0000-3000.0000	→	2000.0000-3000.0000	mem	←	2000.0000-3000.0000	A32
EVB_2_256	3000.0000-4000.0000	→	3000.0000-4000.0000	mem	→	3000.0000-4000.0000	A32
EVB_2_256	6000.0000-7000.0000	→	6000.0000-7000.0000	mem	→	EVB_2_256:3000.0000	SCI
VMEA24	FB00.0000-FBFF.FFFF	→	FB00.0000-FBFF.FFFF	mem	→	00.0000-FF.FFFF	A24
VMEA16	F9FF.0000-FA00.0000	→	F9FF.0000-FA00.0000	mem	→	0000-FFFF	A16
VMECSR	x	→	x	mem	→	x	CSR
PCI Memory	FD00.0000-FD10.0000	→	FD00.0000-FD10.0000	mem	x	x	x
SCSI Reg.	FD01.0000-FD01.FFFF	→	FD01.0000-FD01.FFFF	mem	x	x	x
SCSI Mem.	FD02.0000-FD02.FFFF	→	FD02.0000-FD02.FFFF	mem	x	x	x
Universe	FD05.0000-FD05.FFFF	→	FD05.0000-FD05.FFFF	mem	x	x	x
PCI I/O	FE00.0000-FE10.0000	→	0000.0000-0010.0000	i/o	x	x	x
ISA	FE00.0000-FE00.FFFF	→	0000.0000-0000.FFFF	i/o	←	01.0000-01.FFFF	A24
SCSI Reg.	FE01.0000-FE01.FFFF	→	0001.0000-0001.FFFF	i/o	x	x	
ENET	FE02.0000-FE02.FFFF	→	0002.0000-0002.FFFF	i/o	x	x	
VGA	FE03.0000-FE03.FFFF	→	0003.0000-0003.FFFF	i/o	x	x	
PMC	FE04.0000-FE04.FFFF	→	0004.0000-0004.FFFF	i/o	x	x	
REGISTERS					x	x	x
Raven MPIC	FC00.0000	←	FC00.0000	mem	x	x	x
Raven/Falcon	FEF8.0000	←	FEF8.0000	mem	x	x	x
ROM	FF00.0000	x	x	x	x	x	x

Event Builder 2 - Auxiliary

	CPU		PCI			VME/SCI	
DRAM	0000.0000-0200.0000	←	0000.0000-0200.0000	mem	←	x	x
EVB2c	01FF.E000-0200.000	←	01FF.E000-0200.000	mem	←	1001.0000-1001.2000	A32
EVBc	1000.0000-1000.2000	→	1000.0000-1000.2000	mem	→	1000.0000-1000.2000	A32
GL3c	1002.0000-1002.2000	→	1002.0000-1002.2000	mem	→	1002.0000-1002.2000	A32
TRGc	1003.0000-1003.2000	→	1003.0000-1003.2000	mem	→	1003.0000-1003.2000	A32
EVB_1_256	2000.0000-3000.0000	→	2000.0000-3000.0000	mem	→	2000.0000-3000.0000x	A32
EVB_2_256	3000.0000-4000.0000	→	3000.0000-4000.0000	mem	←	3000.0000-4000.0000	A32
EVB_1_256	5000.0000-6000.0000	→	5000.0000-6000.0000	mem	→	EVB_1_256:2000.0000	SCI
VMEA24	FB00.0000-FBFF.FFFF	→	FB00.0000-FBFF.FFFF	mem	→	00.0000-FF.FFFF	A24
VMEA16	F9FF.0000-FA00.0000	→	F9FF.0000-FA00.0000	mem	→	0000-FFFF	A16
VMECSR	x	→	x	mem	→	x	CSR
PCI Memory	FD00.0000-FD10.0000	→	FD00.0000-FD10.0000	mem	x	x	x
SCSI Reg.	FD01.0000-FD01.FFFF	→	FD01.0000-FD01.FFFF	mem	x	x	x
SCSI Mem.	FD02.0000-FD02.FFFF	→	FD02.0000-FD02.FFFF	mem	x	x	x
Universe	FD05.0000-FD05.FFFF	→	FD05.0000-FD05.FFFF	mem	x	x	x
PCI I/O	FE00.0000-FE10.0000	→	0000.0000-0010.0000	i/o	x	x	x
ISA	FE00.0000-FE00.FFFF	→	0000.0000-0000.FFFF	i/o	←	02.0000-02.FFFF	A24
SCSI Reg.	FE01.0000-FE01.FFFF	→	0001.0000-0001.FFFF	i/o	x	x	
ENET	FE02.0000-FE02.FFFF	→	0002.0000-0002.FFFF	i/o	x	x	
VGA	FE03.0000-FE03.FFFF	→	0003.0000-0003.FFFF	i/o	x	x	
PMC	FE04.0000-FE04.FFFF	→	0004.0000-0004.FFFF	i/o	x	x	
REGISTERS					x	x	x
Raven MPIC	FC00.0000	←	FC00.0000	mem	x	x	x
Raven/Falcon	FEF8.0000	←	FEF8.0000	mem	x	x	x
ROM	FF00.0000	x	x	x	x	x	x

Global Level 3

	CPU		PCI			VME/SCI	
DRAM	0000.0000-0200.0000	←	0000.0000-0200.0000	mem	←	x	x
GL3c	01FF.E000-0200.000	←	01FF.E000-0200.000	mem	←	1002.0000-1002.2000	A32
EVB2c	1001.0000-1001.2000	→	1001.0000-1001.2000	mem	→	1001.0000-1001.2000	A32
EVB1c	1002.0000-1002.2000	→	1002.0000-1002.2000	mem	→	1000.0000-1000.2000	A32
TRGc	1003.0000-1003.2000	→	1003.0000-1003.2000	mem	→	1003.0000-1003.2000	A32
EVB_1_256	5000.0000-6000.0000	→	5000.0000-6000.0000	mem	→	EVB_1_256:2000.0000	SCI
TRG_256	4000.0000-5000.0000	→	4000.0000-5000.0000	mem	→	4000.0000-5000.0000	A32
EVB_2_256	6000.0000-7000.0000	→	6000.0000-7000.0000	mem	→	EVB_2_256:3000.0000	SCI
SCI	5000.0000-7000.0000	→	5000.0000-7000.0000	mem	←	5000.0000-7000.0000	A32
VMEA24	FB00.0000-FBFF.FFFF	→	FB00.0000-FBFF.FFFF	mem	→	00.0000-FF.FFFF	A24
VMEA16	F9FF.0000-FA00.0000	→	F9FF.0000-FA00.0000	mem	→	0000-FFFF	A16
VMECSR	x	→	x	mem	→	x	CSR
PCI Memory	FD00.0000-FD10.0000	→	FD00.0000-FD10.0000	mem	x	x	x
SCSI Reg.	FD01.0000-FD01.FFFF	→	FD01.0000-FD01.FFFF	mem	x	x	x
SCSI Mem.	FD02.0000-FD02.FFFF	→	FD02.0000-FD02.FFFF	mem	x	x	x
Universe	FD05.0000-FD05.FFFF	→	FD05.0000-FD05.FFFF	mem	x	x	x
PCI I/O	FE00.0000-FE10.0000	→	0000.0000-0010.0000	i/o	x	x	x
ISA	FE00.0000-FE00.FFFF	→	0000.0000-0000.FFFF	i/o	←	00.0000-00.FFFF	A24
SCSI Reg.	FE01.0000-FE01.FFFF	→	0001.0000-0001.FFFF	i/o	x	x	
ENET	FE02.0000-FE02.FFFF	→	0002.0000-0002.FFFF	i/o	x	x	
VGA	FE03.0000-FE03.FFFF	→	0003.0000-0003.FFFF	i/o	x	x	
PMC	FE04.0000-FE04.FFFF	→	0004.0000-0004.FFFF	i/o	x	x	
REGISTERS					x	x	x
Raven MPIC	FC00.0000	←	FC00.0000	mem	x	x	x
Raven/Falcon	FEF8.0000	←	FEF8.0000	mem	x	x	x
ROM	FF00.0000	x	x	x	x	x	x

Trigger Processor

	CPU		PCI			VME/SCI	
DRAM	0000.0000-0200.0000	←	0000.0000-0200.0000	mem	←	x	x
TRGc	01FF.E000-0200.000	←	01FF.E000-0200.000	mem	←	1003.0000-1003.2000	A32
EVB2c	1001.0000-1001.2000	→	1001.0000-1001.2000	mem	→	1001.0000-1001.2000	A32
GL3c	1002.0000-1002.2000	→	1002.0000-1002.2000	mem	→	1002.0000-1002.2000	A32
EVB1c	1000.0000-1000.2000	→	1000.0000-1000.2000	mem	→	1000.0000-1000.2000	A32
RBUD32	A000.0000-A100.0000	→	A000.0000-A100.0000	mem	→	A000.0000-A100.0000	A32
TRG_256	4000.0000-5000.0000	→	4000.0000-5000.0000	mem	←	4000.0000-5000.0000	A32
VMEA24	FB00.0000-FBFF.FFFF	→	FB00.0000-FBFF.FFFF	mem	→	00.0000-FF.FFFF	A24
VMEA16	F9FF.0000-FA00.0000	→	F9FF.0000-FA00.0000	mem	→	0000-FFFF	A16
VMECSR	x	→	x	x	→	x	CSR
PCI Memory	FD00.0000-FD10.0000	→	FD00.0000-FD10.0000	mem	x	x	x
SCSI Reg.	FD01.0000-FD01.FFFF	→	FD01.0000-FD01.FFFF	mem	x	x	x
SCSI Mem.	FD02.0000-FD02.FFFF	→	FD02.0000-FD02.FFFF	mem	x	x	x
Universe	FD05.0000-FD05.FFFF	→	FD05.0000-FD05.FFFF	mem	x	x	x
PCI I/O	FE00.0000-FE10.0000	→	0000.0000-0010.0000	i/o	x	x	x
ISA	FE00.0000-FE00.FFFF	→	0000.0000-0000.FFFF	i/o	←	03.0000-03.FFFF	A24
SCSI Reg.	FE01.0000-FE01.FFFF	→	0001.0000-0001.FFFF	i/o	x	x	
ENET	FE02.0000-FE02.FFFF	→	0002.0000-0002.FFFF	i/o	x	x	
VGA	FE03.0000-FE03.FFFF	→	0003.0000-0003.FFFF	i/o	x	x	
PMC	FE04.0000-FE04.FFFF	→	0004.0000-0004.FFFF	i/o	x	x	
REGISTERS					x	x	x
Raven MPIC	FC00.0000	←	FC00.0000	mem	x	x	x
Raven/Falcon	FEF8.0000	←	FEF8.0000	mem	x	x	x
ROM	FF00.0000	x	x	x	x	x	x