

VadaTech MicroTCA

# SRIO Configuration Guide

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Version 2.0

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## Revision History

Doc Rev	Description of Change	Revision Date
1.0	Document Created	09/15/2009
2.0	Update document for VT851, VT852 and VT853	02/22/2010

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# 1 Overview

This document describes the SRIO configuration support on the VadaTech MicroTCA platforms.

## 1.1 Applicable Products

- VadaTech UTC001 (D=2)
- VadaTech UTC002 (D=2)
- VadaTech UTC003 (D=2)
- VadaTech VT851 (C=2)
- VadaTech VT852 (C=2,C=3)
- VadaTech VT853 (C=2)

## 1.2 Document References

- PICMG® 3.0 Revision 3.0 AdvancedTCA® Base Specification
- PICMG® AMC.0 R2.0 Advanced Mezzanine Card Base Specification
- RapidIO™ Interconnect Specification Revision 1.3

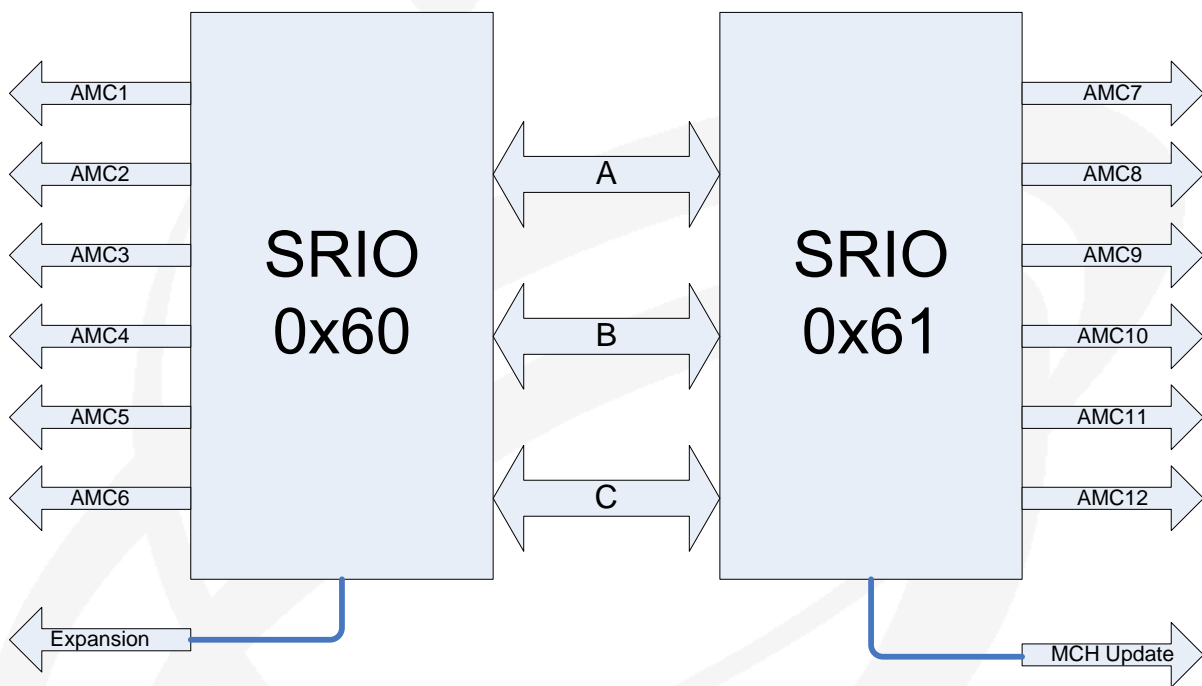
## 1.3 Acronyms Used in this Document

Acronym	Description
AMC	Advanced Mezzanine Card
MCH	MicroTCA Carrier Hub
SRIO	Serial RapidIO

Table 1: Acronyms

## 2 SRIO Overview

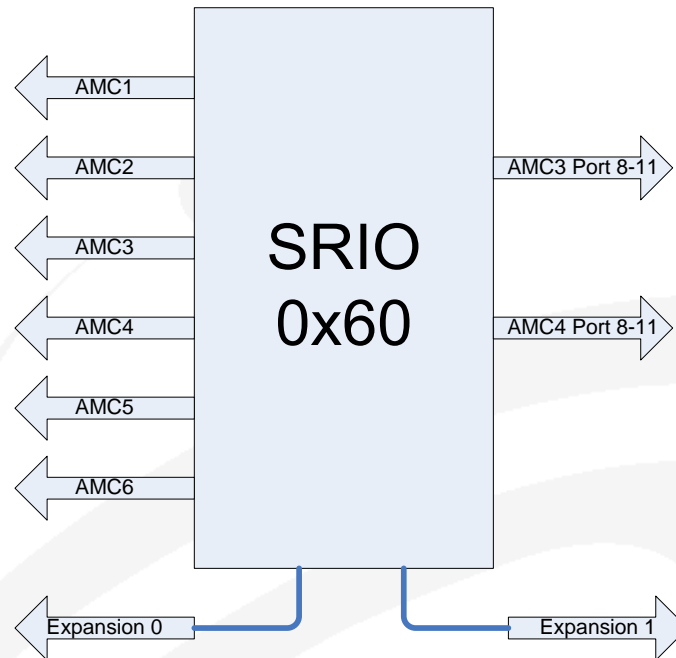
This section gives a brief description of the SRIO hardware implementation that is useful for understanding manual routing configuration. **Figure 1** shows the 2 switches that make up the SRIO switch hardware for the UTC001, UTC002, UTC003, VT851, VT852 (C=3) and VT853 with 3 cross-link connections between the switches. Each switch is also connected to 6 of the AMC slots.



**Figure 1: SRIO Port Connections for dual switch fabric**



**Figure 2** shows the single switch configuration for VT852 with ordering option C=2. Each AMC slot is connected to the switch on AMC ports 4-7, and AMC slot 4 and 6 are also connected on AMC ports 8-11. There are also 2 SRIO ports connected to the front panel QSFP connectors.



**Figure 2: SRIO Port Connections for single switch fabric**

## 3 SRIO Configuration File

The SRIO configuration file is found on the VT002 as `/etc/vtsrio.conf`. This file is commented to assist in modifying the configuration.

### 3.1 ROUTING

The **ROUTING** option specifies if the configuration should be read from the configuration file or left in a default state for configuration by a connected SRIO host. Setting this value to **FILE** will cause the SRIO switch to be configured. Setting this value to **SRIO\_HOST** will cause the SRIO switch to be left in a default state for configuration by the SRIO host.

### 3.2 SWITCH

The **SWITCH** option specifies the SRIO switches that are available on the platform. There should be one **SWITCH** option for each SRIO switch.

### 3.3 ALIAS

The **ALIAS** option specifies a name, switch number and port number that will be used later in the configuration to define available destinations and default routes.

### 3.4 DEFAULT\_ROUTE

The **DEFAULT\_ROUTE** option specifies the port that all unassigned SRIO destination IDs will be routed to. This can be any defined **ALIAS** name. There should be one **DEFAULT\_ROUTE** option for each SRIO switch.

### 3.5 DOMAIN\_ID

The **DOMAIN\_ID** option specifies which SRIO domain the switches belong to when a 16-bit destination ID is received.

## 3.6 DESTINATION

For each available port, the **DESTINATION** option specifies all SRIO destination IDs that are reachable via that port.

The available port names are defined by the **ALIAS** sections.



## 4 SRIO Configuration Examples

This section contains several examples of manual SRIO configurations.

### 4.1 Single destination per slot

**Example configuration file:**

```
ROUTING=FILE
SWITCH=0x60
ALIAS=AMC-1,0x60,4
ALIAS=AMC-2,0x60,9
ALIAS=AMC-3,0x60,6
ALIAS=AMC-4,0x60,2
AMC-1=1
AMC-2=0x80
AMC-3=0x81
AMC-4=0x82
```

This configuration contains 4 SRIO destinations, 1, 0x80, 0x81, and 0x82, that are reachable by sending traffic to AMC slot 1, 2, 3, and 4, respectively.

### 4.2 Multiple destinations per slot

**Example configuration file:**

```
ROUTING=FILE
SWITCH=0x60
ALIAS=AMC-1,0x60,4
ALIAS=AMC-6,0x60,0
AMC-1=1,2
AMC-6=10,11
```

This configuration contains 2 SRIO destinations that can be reached through AMC1 and 2 SRIO destinations that can be reached through AMC6. Any packets entering the switch with destination IDs 1, 2, 10 or 11 will be directed to the corresponding AMC.

## 4.3 Cross-link

**Example configuration file:**

```
ROUTING=FILE
SWITCH=0x60
SWITCH=0x61
ALIAS=AMC-2,0x60,9
ALIAS=AMC-4,0x60,2
ALIAS=AMC11,0x61,4
ALIAS=AMC12,0x61,9
ALIAS=X1_A,0x60,5
ALIAS=X2_A,0x61,7
AMC-2=0x80
AMC-4=1
X1_A=0x81,0x82
AMC11=0x81
AMC12=0x82
X2_A=1,0x80
```

This configuration contains 4 SRIO destinations.

## 4.4 Multicast

**Example configuration file:**

```
ROUTING=FILE
SWITCH=0x60
ALIAS=AMC-2,0x60,9
ALIAS=AMC-4,0x60,2
ALIAS=AMC-6,0x60,0
AMC-2=1
AMC-4=0x90
AMC-6=0x90
```

This configuration specifies multiple ports that contain destination ID 0x90. The routing algorithm interprets this as a request for multicast routing. Any packet with destination ID 0x90 entering the switch will be multicast to all ports with 0x90 in the destination list, excluding the port the packet entered the switch on.