

# PA-A1 and PA-A3 VIP2 Configurations Supported

## Overview

Supporting physical interfaces up to 155 Mbps, the ATM port adapter (PA-A1) and the Enhanced ATM port adapter (PA-A3) require a large amount of switching performance and bandwidth capacity. Consequently, certain combinations of ATM port adapters and other port adapters can exceed the capabilities of Versatile Interface Processor (VIP2) models that were designed for lower performance and bandwidth applications. Therefore, in some configurations no other port adapter can be installed in the VIP2 when an ATM port adapter is installed.

This document summarizes the ATM port adapter/VIP2 configurations supported, and also describes the new dual port adapter support in the same VIP2-50 with the OC-3/Synchronous Transport Module level 1 (STM-1) version of the PA-A3 in IOS Release 11.1(21)CC (orderable as 11.1(21)R) or higher.

## Configurations Supported

- A single PA-A1-OC3MM or PA-A1-OC3SM can be installed in the VIP2-15, VIP2-40, or VIP2-50 with no other port adapter in the other slot. There are no plans to provide dual port adapter support on any VIP2 for PA-A1-OC3MM and PA-A1-OC3SM.
- The PA-A3-T3 and PA-A3-E3 are supported on the VIP2-40 and VIP2-50. All port adapter combinations are supported with the PA-A3-T3 or PA-A3-E3 in the VIP2-40 or VIP2-50, including two PA-A3-T3 or PA-A3-E3 port adapters in the same VIP2-40 or VIP2-50. There are no plans to provide PA-A3-T3 or PA-A3-E3 support on the VIP2-15.
- The PA-A3-OC3SMM, PA-A3-OC3SMI, and PA-A3-OC3SML are supported on the VIP2-40 and VIP2-50. A single PA-A3-OC3SMM, PA-A3-OC3SMI, or PA-A3-OC3SML can be installed in the VIP2-40 with no other port adapter in the other slot. All port adapter combinations are supported with PA-A3-OC3SMM, PA-A3-OC3SMI, and PA-A3-OC3SML in the VIP2-50, including two PA-A3-OC3SMM, PA-A3-OC3SMI, or PA-A3-OC3SML port adapters in the same VIP2-50. There are no plans to provide PA-A3-OC3SMM, PA-A3-OC3SMI, or PA-A3-OC3SML support on the VIP2-15.

Table 1 Supported ATM Port Adapter Configurations

Port Adapter	Cisco 7500					
	VIP2-15		VIP2-40		VIP2-50	
	Single PA	Dual PAs	Single PA	Dual PAs	Single PA	Dual PAs
PA-A1-OC3MM	x		x		x	
PA-A1-OC3SM	x		x		x	
PA-A3-T3			x	x	x	x
PA-A3-E3			x	x	x	x



	Cisco 7500					
	VIP2-15		VIP2-40		VIP2-50	
Port Adapter	Single PA	Dual PAs	Single PA	Dual PAs	Single PA	Dual PAs
PA-A3-OC3SMM			x		x	x <sup>1</sup>
PA-A3-OC3SMI			x		x	x <sup>1</sup>
PA-A3-OC3SML			x		x	x <sup>1</sup>

1. New as of Cisco IOS® Release 11.1(21)CC (orderable as 11.1(21)R).

**Note:** Note that any port adapters not currently supported on the VIP2-50 (such as Token Ring and 100VG) can not be paired with an ATM port adapter in the above configurations. Also, the combination of Compression Service Adapter (CSA) and/or Encryption Service Adapter (ESA) and an ATM port adapter is not supported in the same VIP2.

### PA-A3-OC-3XX/VIP2-50 Performance Note

The PA-A3-OC3SMM, PA-A3-OC3SMI, and PA-A3-OC3SML are designed to provide maximum switching performance when a single port adapter is installed in a single VIP2-50. A single PA-A3-OC3SMM, PA-A3-OC3SMI, or PA-A3-OC3SML in a VIP2-50 provides up to approximately 85,000 packets per second of switching capacity in each direction using 64-byte packets. Note that a single PA-A3-OC3SMM, PA-A3-OC3SMI, or PA-A3-OC3SML alone can use the entire switching capacity of a single VIP2-50.

For applications that require maximum port density or lower system cost, dual port adapter configurations with the OC-3/STM-1 version of the PA-A3 in the same VIP2-50 are now supported. The two port adapters in the same VIP2-50 share approximately 95,000 packets per second of switching capacity in each direction using 64-byte packets.

The VIP-50 provides up to 400 megabits per second (mbps) of aggregate bandwidth depending on the port adapter combinations. In most dual port adapter configurations with the PA-A3-OC3SMM, PA-A3-OC3SMI, or PA-A3-OC3SML, the combination of port adapters will exceed this aggregate bandwidth capacity.

Consequently, the performance shared between the two port adapters installed in the same VIP2-50 will be limited by the aggregate switching capacity (95 kpps) at small packet sizes, and by the aggregate bandwidth (400 mbps) at large packet sizes.

These performance caveats must be considered when designing ATM networks with the PA-A3-OC3SMM, PA-A3-OC3SMI, or PA-A3-OC3SMIPA-A3-OC3MMPA-A3-OC3MM. Depending on the design, the performance of dual port adapters in the same VIP2-50 may or may not be acceptable.

### IOS Release Support

PA-A3-OC3MM, PA-A3-OC3SMI and PA-A3-OC3SML dual port adapter configurations on the VIP2-50 are supported in IOS Release 11.1(21)CC (orderable as 11.1(21)R) or higher. All other PA-A1 and PA-A3 configurations were supported when the port adapters initially shipped.

### Further Assistance

For information on the Cisco 7500 and 7200 ATM port adapter, refer to following URL:

<http://www.cisco.com/warp/customer/cc/cisco/mkt/core/adap/atm/>



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