

# SS 500



## Introduction

Enterprises are working hard to ensure the security and integrity of their data. Theft of data can occur as a result of an intentional attack from variety of sources, including hackers, business competitors, and disgruntled employees. Whether malicious or accidental, the consequences of data loss or security leaks would be devastating to an organization. To reduce the risks of exposing company data and the associated risk of public embarrassment, enterprises require data to be encrypted. This is especially important when sending data off-site for backup.

Data is generally compressed to conserve storage space. Using compression, more than twice the amount of data can be stored compared to storage without compression. Since the amount of data to be written is also less, the speed of the

system is also increased. However, compression is also very CPU-intensive. Hence, the speed benefit is reduced or nullified if compression is done using software. Thus, the most benefit is obtained when using dedicated hardware to perform compression.

The SS 500 board from Indra Networks delivers real time compression and encryption of data as it is been backed up. SS 500 has one compress / decompress engine and a separate encryption / decryption engine, which allows compression and encryption to work in tandem. This offloads two compute-intensive tasks from the CPU, allowing it to focus on the task of backing up data. This reduces the time required for backup and can be extremely useful to fit larger and larger backups in smaller and smaller backup windows.

Key management is a critical issue with encryption. If the keys are lost, data cannot be recovered. Alternatively, if keys are stolen, then unauthorized users will be able to decrypt and thus access company data. To combat this problem, Indra Networks has implemented a simple yet secure key management solution. For maximum security, the keys are stored within the SS card itself, although the system administrator should keep a backup set, preferably on a USB drive. If desired, the application software may implement its own key management system. The SS 500 card is designed to select the correct key out of up to 64 stored in it for decryption of any file, saving the administrator the hassle of remembering which file was encrypted with which key.

## Features and Benefits of the SS 500

Feature	Benefit
Hardware accelerated data compression and encryption.	Reduced CPU utilization, allowing CPU to focus on other tasks.
Separate compression and encryption engines.	Compression and encryption run in parallel, showing improved performance.
Compression and encryption done together.	No need for an interface.
Key management incorporated in hardware using software interface.	Simple, easy -to-use, but still secure key management.
Compression using 'deflate' algorithm.	Best compression ratios in the industry.
AES encryption with random 128 bit and 256 bit keys.	High-standard encryption which is very difficult to hack.
Keys are stored in the hardware itself.	No need to memorize passwords.
Readymade solution for Amanda and EMC Retrospect users.	Saves time for the system administrator.

## Applications

- 1) Tape encryption appliances
- 2) Disk based backup appliances
- 3) Backup servers

## Technical Specifications

Specifications	StorSecure 500
Compression Algorithm	GZIP/ZLIB format
Compression Ratio	
Calgary corpus	2.39 : 1
Canterbury corpus	2.78 : 1
Performance	
Compression:	130 MByte/sec
Decompression:	110 MByte/sec
Encryption:	130 MB/s (128-bit), 105 MB/s (256-bit)
Decryption:	130 MB/s (128-bit), 105 MB/s (256-bit)
Operating System Support	<i>Linux Redhat 9, Fedora Core 10, CentOS 5.2</i> (Driver source available to OEM customers) Windows server 2003 Edition x86, x64 Windows server 2008 Edition x86, x64
Power Consumption	
+3.3V	750 mA (Typ) / 860 mA (Max)
+12V	190 mA (Typ) / 230 mA (Max)
Bus Type	PCI Express 1.1 compliant (x4)
Humidity Range	5% - 85% (non-condensing)
Operating Temperature	Ambient Temperature: 5-45 deg. C
Dimensions	
Form Factor:	Low Profile, MD2
Length:	167.65 mm
Height:	68.90 mm
Note: Above dimensions are for the PCB only and do not include the mounting bracket	
Warranty	1 year return to factory for hardware