VECTOR DATA

Powered By:

TOSHIBA
Leading Innovation >>>

ON-AIR MAX FLASH™
Flash Memory Playout Server

High reliability

Flash Memory	IP Network	RAID

· Solid-state and Maintenance-free recording media.
· Using the latest 64 Gbit chips sets and high speed 10/1G LAN interface.
· Choose level of redundancy, Flash Memory RAID is also available. Re-build speed is about three times faster than HDD.

Multi I/O, High availability

High speed file interface

· High resolution media files are one of the most demanding types of network traffic.
· Toshiba's original High Speed File transfer network architecture introduces new effective workflow.
· Up to 30 × 800 Mbps ports simultaneously.
· File base transfers can play out even while they are still being ingested.

Multi I/O: Delivering excellent performance

· Offering High I/O capabilities. With concurrent Input/Output operation, Toshiba Can play 40 ch of real time frame accurate outputs all at once.

Open interface

VDCP	API	SEC NET-LAN

· For control, ON-AIR MAX FLASH™ exposes its API as a general interface as well as supporting VDCP.

Low power consumption, space saving

Low Power Consumption	SLC 64 Gbit

· Low power consumption, reduced by 40 % compared to previous models. Low heat dissipation using the latest SLC 64 Gbit chips.

Great Flexibility

0.25 TB	0.5 TB	1 TB

· Scale storage from 1 TB - 60 TB.
· Using one of Toshiba's three types of memory cards: 0.25 TB, 0.5 TB or 1 TB cards.

CODECS	MXF

· Supporting latest codec formats: MPEG 2 Long GOP / ALL I and H.264 ALL I (AVC-Intra)
· Supporting File format: MXF OP1a

Up/Down Conversion features

· High Quality Up/Down conversions with Low Latency, Closed caption & AFD support and Audio transparency.

Capabilities and Feature

Reliable Hardware

High reliability using the original flash memory management technology.

- Based on proven results for large capacity and high bandwidth environments, ON-AIR MAX FLASH™ uses the latest 64 Gbit chip set and high speed 10/1G LAN interface.
- Unlike the competition, Toshiba has developed a flash memory controller that monitors the wear leveling and erase rewrites to prevent the common secular wearing as seen in most "other" SSD applications.
- Toshiba also employs FEC (Forward error correction) to prevent any data write lost. Redundant power supplies are also included benefits.

800 Mbps High Speed File Transfers

- Toshiba's original high-speed communication platform "NPEngine™" offers high-speed file transfers.
- 30 ports × 800 Mbps for MXF and other media files transfers.

Power and Space Saving

- Power consumption is reduced by 40% compared to previous models.
- Space saving is accomplished by condensing Toshiba's latest 64 Gbit NAND flash chips onto single memory cards.
- A greener environment has been achieved by using our low power design with our latest flash memory chip set.
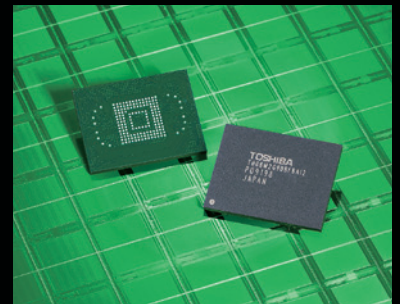
Toshiba NAND type flash memory
*Size/shape characteristics may differ from actual image.

Flexible Configuration

High flexibility

- Three types of memory card sets are available to choose from : 0.25 TB, 0.5 TB, and 1TB
- Hot swappable cards make it easy to expand I/O's and memory capacity. Add channels, formats and bandwidth as needed.
- The system can be upgraded automatically by changing the configuration of the cards and software.

One Chassis Solution

- Offering encoders, decoders, flash memory storage, controllers and system management, all in a single 5RU chassis.
- Minimizing chassis size, lowering power consumption, fewer internal cable connections, hot swappable, easy maintenance contribute to a greener footprint.

Free Slot Configuration

- ON-AIR MAX FLASH™ has a free slot architecture. Up to any 16 cards can be installed into a single 5RU chassis. The card combination and slot location can be adjusted by user's request.

Multi-Channels High performance workflow

The high-speed file transfer at 800 Mbps that grows with ever needing requirements and change.

- The ON-AIR MAX FLASH™ has 10 IP ports, each with 800 Mbps of dedicated bandwidth for non-real-time file transfers. It also offers simultaneous I/O operation with 40 ch of frame accurate real time baseband outputs ports.
- Currently scaling at 60TB of flash memory storage.
- ON-AIR MAX FLASH™ can adapt to customer's ever changing workflow, creating an architect that grows as requirements and needs grow.
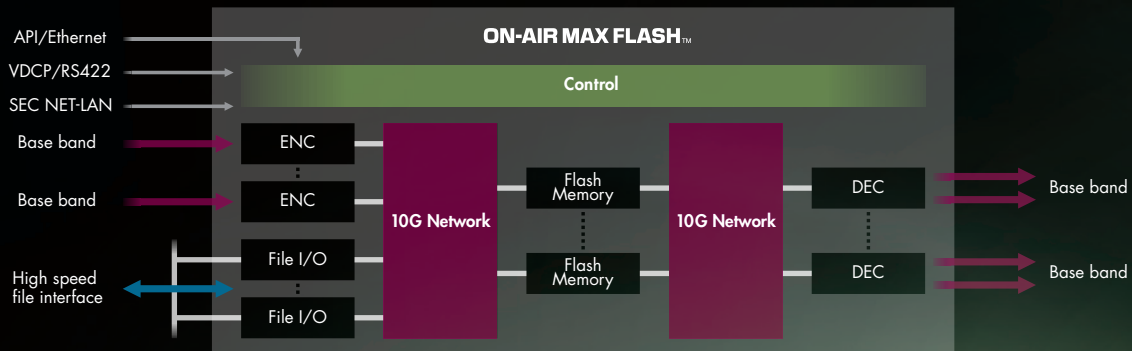
Scalable up to 30 channel inputs /40 channel outputs with 60TB of secure storage.

- Because each server platform is scalable from 1TB to 60TB, Toshiba servers can expand from small to large.
- Toshiba video server design philosophy is based on dedicated "real time-direct-to-air."
- All I/O ports are real time/frame accurate video presets executed from a given time schedule.
- There are no load variations in processing speeds, as seen with Hard Disk Drive computers.

Multi-Codec / Format / Converter

Multi-Codec/Format/Converter

- ON-AIR MAX FLASH™ supports 1080i, 720p, 480i and 576i format for ingest and play out. (NTSC/PAL)
- Internal Multi Converter (M/C) allow users to specify separate formats for each individual output ports. Back-to-back playout is available for different compression formats and/or different picture resolutions.
- Supported codec formats are: MPEG2 Long GOP/ALL I and H.264 ALL I (AVC-Intra).
- Encoders and decoders support both these formats.
- Closed Caption conversion, EIA-608/EIA-708 support.
- AFD support.

Standard protocol and open platform API

Open control interface

■ ON-AIR MAX FLASH™ offers an open API over IP, allowing various MAM applications and 3rd party controllers to neatly tie into the ON-AIR MAX FLASH™ for more intricate workflows. Standard VDCP is also accepted.
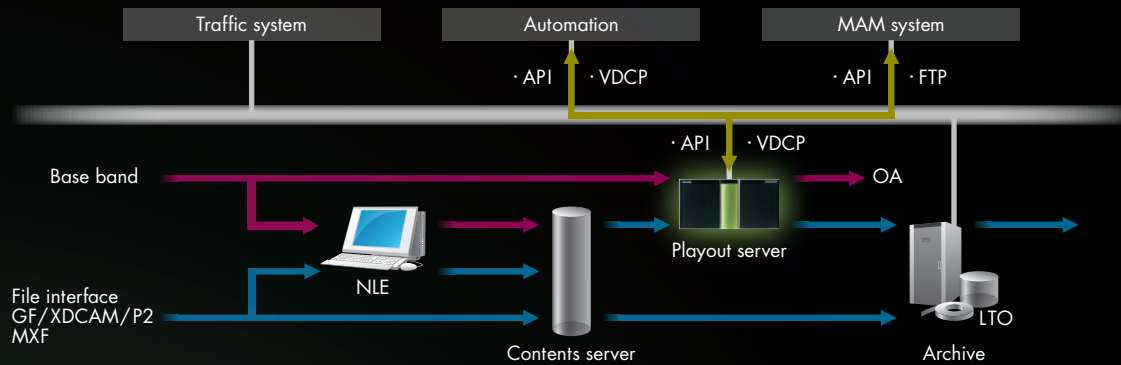
Application for ON-AIR MAX FLASH™

■ File management tool for ON-AIR MAX FLASH™
■ Play List / File Transfer / Delete command available from external PC
■ Traffice / Automation playlist compatible
■ Secondary event support
■ Based API (Application Program Interface)
■ Control via Ethernet LAN
■ API and VDCP compliant
■ SNMP and alarm log files.
■ As Run Log

Technical specifications

In/Output signal format	Video (NTSC/PAL)	HD-SDI: SMPTE292M 1080i/59.94Hz, 1080i/50Hz, 720P/59.94Hz, 720P/50Hz
		SD-SDI: SMPTE259M 480i/59.94Hz, 576i/50Hz
		Up/Down conversion/Cross conversion with Close Caption, AFD, VANC, Ancillary Data support
	Audio	Embedded Audio: 16 audio channels per video channel on 75Ω BNC
		Discrete AES/EBU (SMPTE272M): 16 inputs (8 pairs) on BNC (75Ω unbalanced)
	Data	Closed Caption (EIA-608, EIA-708)
		Ancillary data (VANC, VBI)
	File	MXF OP1a
Number of In/Output	Baseband input	min. 1ch/max. 30ch
	Baseband output	min. 2ch/max. 40ch
Compression format	Video	MPEG2 LONG GOP/I-frame only, AVC-Intra
		Support bit rate — HD: MPEG2 17.5Mbps, 25Mbps, 35Mbps, 50Mbps/AVC-Intra 50Mbps, 100Mbps
		SD: MPEG2 I-frame only 30Mbps, 40Mbps, 50Mbps
		AVC-Intra (H.264 I-frame only) User selectable bit rate (HD: 50/100Mbps)
	Audio	Non-compressed PCM 24bit@48KHz
		Dolby Digital and Dolby E pass through
Storage	Storage Device	SLC 64Gbit Flash Memory
	Selectable Memory Card	3 type: 0.25/0.5/1TB (can be selected by user's request)
	Storage (per 5RU chassis)	Maximum storage capacity in standard 5RU: 8TB (2 memory sets)
		1 memory set is consisting of 4 memory cards (5 memory cards are necessary for RAID option)
	Minimum storage time	i.e. 30hours@65Mbps
	Maximun storage time	i.e. 1000hours@65Mbps
Genlock	Analog BB (Black Burst)	BNC, 75Ω
Network interface	1 Gbps Ethernet	FTP
		File transfer speed: 30 Ports × 800Mbps maximum
	Ethernet for maintenance	HTTP/SNMP
Control protocol	API/Ethernet	
	RS-422/VDCP or Sony 9pin protocol	
	GPIO (8 GPIO lines configurable)	

Chassis/Mechanical/Electrical specification

Chassis	5RU	221 (H) × 436 (W) × 576 (D) Free slot configuration
Power supply	Power supply	100-240V 50Hz/60Hz
		Hot Swappable
	Power consumption	depends on the configuration
Conditions	Temparature	5 to 35 ℃

Please refer to "Operational Manual" for operation and safety procedures.