

Ikegami

TOSHIBA
Leading Innovation >>>

GFTM **STATION**

FLASH MEMORY RECORDER GFS-V10



Concept

FLASH MEMORY TECHNOLOGY

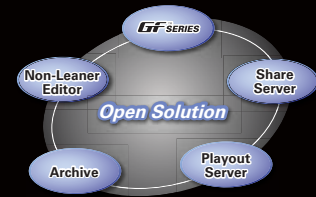
Utilizing a non-volatile semiconductor device for high speed access to Flash Memory media. Offers advanced Flash Memory technology such as Memory Management, Error Correction (ECC) and Wear-leveling.

- High Capacity NAND Flash Memory (SLC)
- High Speed Random Access
- Overwrite: 100,000 times and over 10 years of archives
- Superb durability against vibration and impact simply because there are no internal moving parts.



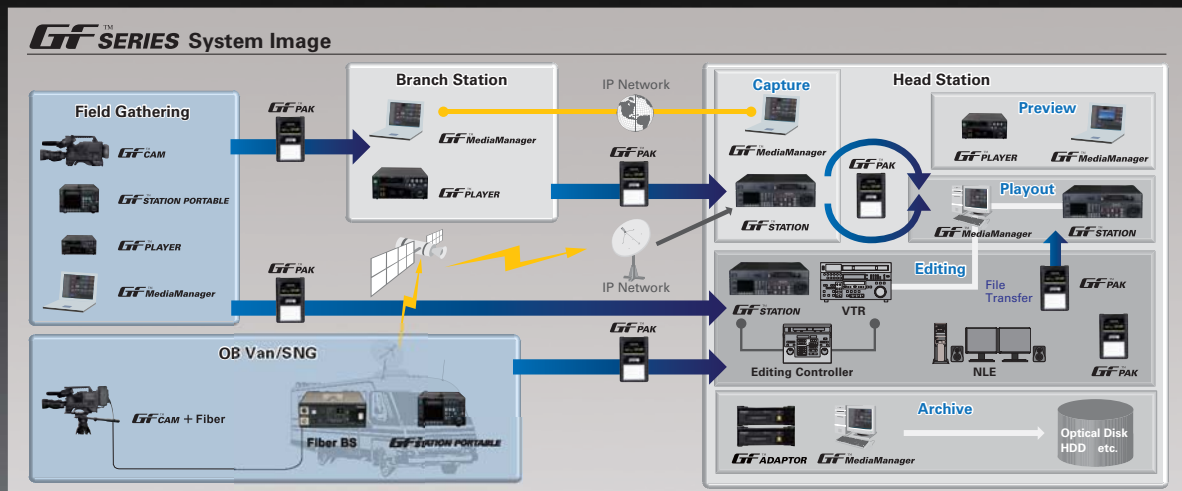
OPEN SOLUTION

Using popular MPEG-2 HD Long GOP 50Mbps/I frame, 100Mbps Codec and MXF File Format. Conforms to SMPTE Standard, assuring compatibility with Non-linear Editors and various tapeless systems. GFSTATIONTM offers a flexible design concept, ready to support future file format changes or new codec systems.

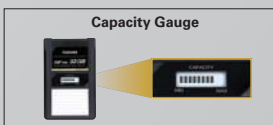


WORKFLOW INNOVATION

Migrating GF series with existing VTR can build a step by step hybrid workflow. Accelerating operations towards a File-Based Workflow solution.



FLASH MEMORY PACK GFTM PAK



- Three different capacity models available , 16GB/32GB/64GB GFPAKTM.
- SATA connector: offering High speed data transfer and high speed recording/read-out.
- Also using standard USB2.0 interface to easily connect to PC.
- LCD Capacitor Gauge to indicate battery capacity (employing Bistable Nematic technology without consuming power).

Recording Time (Unit: Minutes)

Capacity	MPEG D10(SD)			MPEG-2 HD	
	30Mbps	40Mbps	50Mbps	LONG GOP 50Mbps	I frame only 100Mbps
16GB	50 min.	37 min.	30 min.	30 min.	15 min.
32GB	100 min.	75 min.	60 min.	60 min.	30 min.
64GB	200 min.	150 min.	120 min.	120 min.	60 min.

Making HD Production Easy and Functional!

GF™ INNOVATION

Multi Format HDTV/SDTV

Multi Task & Multi Interface Capability



GF™ STATION
FLASH MEMORY RECORDER GFS-V10

Optimized for replacing VTR Linear Editing Systems, OB Van, Master Control System and other various applications

Master Control System Application

Simultaneously playback content while recording
Simultaneously playback content while importing media via Ethernet
Content can be copied from GFPACK™ to Internal Flash Memory for playback



OB Van Application

Offering Flash Memory Media to sustain vibration and impacts.
Ideal for Slow Motion Playback and/or Rec-to-Play Operation.



HD/SD Multi Codec Format

Support MPEG-2 422P@HL compression format. REC/PLAY available with 50Mbps (LONG GOP) or 100Mbps (I frame only). 4:2:2 Color Sampling, 1920x1080 Pixel / 1280x720 Pixel Full HD Video.

Three bit rate options for SD: 30Mbps / 40Mbps / 50Mbps selectable
Support both 480(59.94i) and 576(50i) formats.

8 Channel of 24bit High Fidelity Digital Audio

8 Channel 24bit/16bit Uncompressed Digital Audio (Sampling Frequency 48kHz)
Rec / Play embedded HD/SD-SDI or AES/EBU Audio

3.5-inch LCD Monitor

3.5-inch LCD Monitor for checking clips, audio level, metadata and storage capacity.
Allow Cue, Play and Editing Controls with Play List (Virtual Clips).



Status Page :
Playback



Thumbnail Page

Built-in Up/Down/Cross Converter

Up/Down Conversion for SD/HD, Cross Conversions between 1080i/720P are standard features.

128GB Internal Flash Memory

128GB of Internal Flash Memory. Stores 4 hours of * HD Video. (approx 240 minutes)

*MPEG-2 LONG GOP(50Mbps)

HD/SD Record Time

HD/SD RecordTime	RecTime
30Mbps(SD)	400 Min.
40Mbps(SD)	300 Min.
50Mbps(SD)	240 Min.
50Mbps(HD LONG GOP)	240 Min.
100Mbps(HD I frame only)	120 Min.

File Share Function

File-Based sharing for Non-Linear Editors and Archive solutions via Gigabit Ethernet (GbE)

VTR Like Operability

± 1x speed Noise-less JOG search
± 2x speed Variable PLAY
± 120x High Speed Shuttle Search
Audio Monitoring during variable playback.



Operation Panel Tilt mechanism
Offering better operability.

Optional Rack Mount Adaptor available for 19-inch Rack installation (3RU Height).

Various Interfaces

Equips various remote interfaces (100 BASE-T,RS-422 (VDCP*, Sony protocol),GPI,TBC) and supports various remote controllers.

Provisions for External VTR Controllers, allowing: Slow-motion Playback, A-Roll or A/B-Roll Editing as a player are available.

*T.B.A.



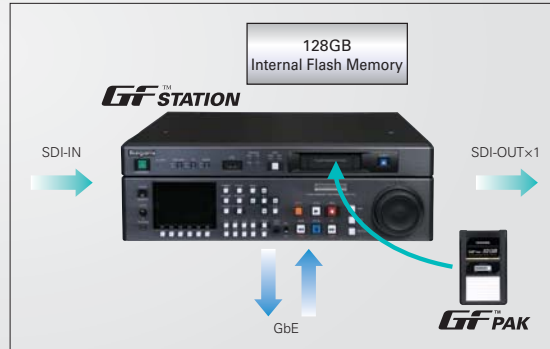
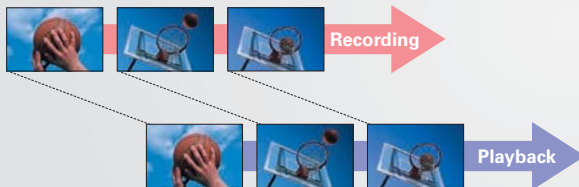
Multi Task Capability

When using Internal Flash Memory
Multi tasks can be handled simultaneously.

Example:

- 1) While Recording, operator can playback and transfer files to NLE.
- 2) While transferring content to Internal memory, operator can simultaneously playback from Internal memory (Chasing Playback)

■ Image of Chasing Playback



Thumbnail and Metadata

Thumbnail clips and metadata can be searched and viewed via LCD monitor.



Editing and Playback of Playlist

During playback, IN/OUT point can be marked on clips to create Playlist (Virtual Clip). Simple edit cuts can then be arranged for seamless playback. Possible to re-edit IN/OUT points.



Playlist screen



IN/OUT Editing screen

Shot Mark Function

Shot Marks can be added to the clips
By using Shot Marks, important scenes can be rapidly searched and Playlists can be easily edited



Meta Data

Dates, names and locations can be memorized within the clip as Metadata.
Metadata Files can be transferred to GFSTATIONTM via USB.

Salvage Function

The Salvage function can rebuild clips with minimum loss of footage due to any unexpected power loss during recording. Salvaged clips will be indicated on the thumbnail picture to notify operator.

Proxy Video*

Low resolution audio/video Proxies can be generated while recording. Proxy data can be copied to external USB memory. Small files makes it fast and easy for preview or data transfer thru IP network.

*T.B.A.

Rating / Performance

General

Power Requirement	100V ~ 240VAC 1.8 ~ 0.8A 50/60Hz
Power Consumption	135W
Dimensions	420 x 132 x 450mm (W/H/D, Except Protruding)
Weight	16kg
Operating Temperature	0 ~ +40 °C
Operating Humidity	10 ~ 80% (Without Condensation)
Storage Temperature	-20 ~ +60 °C

Video Specification

Sampling Frequency	HD:Y : 74.25MHz (and /1.001) Pb/Pr : 37.125MHz (and /1.001) SD:Y : 13.5MHz Pb/Pr : 6.75MHz
Quantization	10bit
Frequency	50 Hz/59.94Hz
Capture Format	1080 59.94i, 50i 720 59.94p, 50p 480i, 576i
Compression Format	HD: MPEG-2 4:2:2P@HL (LONG GOP/I frame only) SD: MPEG D10 4:2:2P@ML
Bit Rate	HD: MPEG-2 LONG GOP 50Mbps MPEG-2 I frame only 100Mbps SD: MPEG D10 50Mbps/40Mbps/30Mbps

Audio Specification

Sampling Frequency	48kHz
Quantization	16/24bit
Frequency Response	20 ~ 20kHz ±1.0dB (against 1kHz)
Dynamic Range	90dB or better
Distortion	0.1% or less (at 1kHz)

File Format Specification

File Format	MXF (OP-Atom)
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Video Interface

HD/SD SDI Input (HD/SD Selectable)	BNC 1ch Video: SMPTE292M/259M Audio: SMPTE299M/272M
HD/SD SDI Output (HD/SD Selectable)	BNC 2ch, BNC 1ch (SUPER ON/OFF Selectable) Video: SMPTE292M/259M Audio: SMPTE299M/272M
SD SDI Output	BNC 1ch (SUPER ON/OFF Selectable) Video: SMPTE259 Audio: SMPTE272M
Analog Composite Output	BNC 1ch (SUPER ON/OFF Selectable) 1.0Vp-p/75Ω, Negative Sync

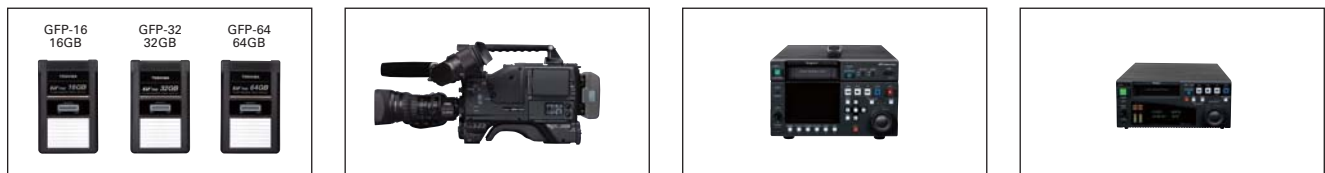
Audio Interface

Digital Input	BNC 4ch 8ch (AES/EBU 4ch) AES3id-1995(48kHz)
Digital Output	BNC 4ch 8ch (AES/EBU 4ch) AES3id-1995(48kHz)
Analog Monitor Output	XLR 2ch 0dBm, Low-impedance (600Ω), Balanced
Head Phone Output	Stereo Mini Jack 1ch

Other Interface

Time Code Input	BNC 1ch SMPTE 12M 0.5Vp-p ~ 18Vp-p
Time Code Output	BNC 1ch SMPTE 12M, 2.0Vp-p
Reference Signal Input	BNC 1ch Tri-Level SYNC(0.6Vp-p ±6dB) or Black Burst(0.286V ±6dB, Negative Sync) Auto Sensing 75Ω termination ON/OFF
Reference Signal Output RS-422A	BNC 1ch (Loop-thru)
TBC REMOTE	D-sub9 2ch
GPI	D-sub15 2ch +12V/0.5A ~ 12V/0.5A
Gbit Ethernet	D-sub25 1ch
100M Ethernet	RJ-45 1ch
EXT	RJ-45 1ch
USB	eSATA 1ch A terminal 1ch, B terminal 1ch MAX0.5A

GFTM SERIES

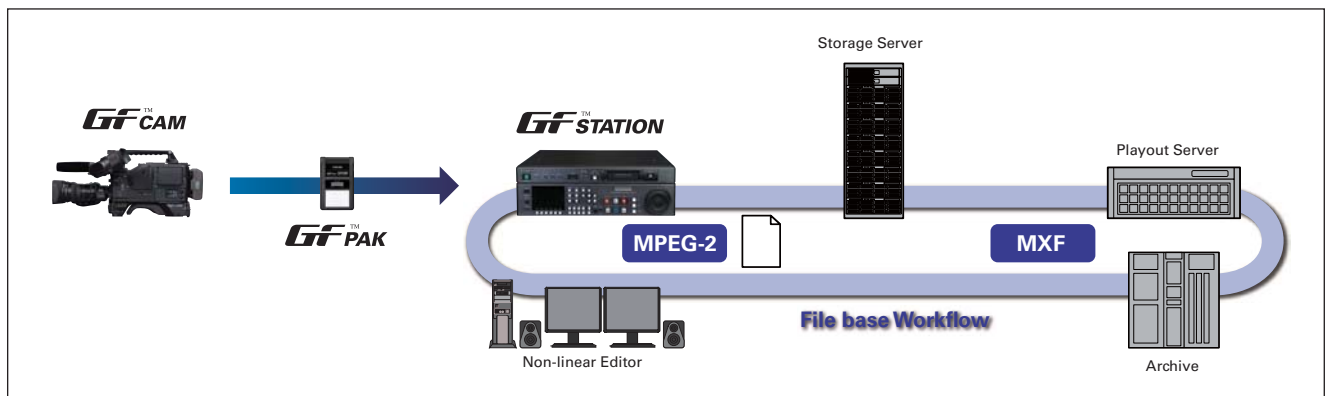


Flash Memory Pack
GF PAK

Tapeless Camera
GF CAM

Portable Flash Memory Recorder
GF STATION PORTABLE

Portable Flash Memory Player
GF PLAYER



● **GF**TM is trademarks of Ikegami and Toshiba.
● **GF SERIES** is co-developed product of Ikegami and Toshiba.

Design and specifications are subject to change without notice.

Ikegami Tsushinki Co.,Ltd.

■ URL:<http://www.ikegami.co.jp/en/>

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■ **Head Office**
5-6-16 Ikegami, Ohta-ku, Tokyo 146-8567, Japan TEL.03-5700-1111/FAX.03-5700-1137

■ **Overseas Sales Division**
5-6-16 Ikegami, Ohta-ku, Tokyo 146-8567, Japan TEL.03-5700-4114/FAX.03-5748-2200

Ikegami Electronics (Europe) GmbH ■ URL:<http://www.ikegami.de>

■ **Headquarters**
Ikegami Strasse 1, D-41460 Neuss, Germany TEL.02131-1230/FAX. 02131-102820

■ **U.K. Branch**
Unit E1 Cologne Court, Brooklands Close, Windmill Road, Sunbury-on-Thames, Middlesex TW16 7EB, England TEL.01932-769700/FAX.01932-769710

■ **Denmark Office**
Horkær 7-9, 2730 Herlev, Denmark TEL.3880-9903/FAX.3881-9903