

LTO-7 Multi Codec Archiving Recorder

LTR-200HS7

Provisional

FOR.A[®]
INNOVATIONS IN VIDEO
and AUDIO TECHNOLOGY

LTO-7 MULTI CODEC ARCHIVING RECORDER LTR-200HS7

Re-defining
Media Archive Workflows



Actual product may differ in appearance from the image above.

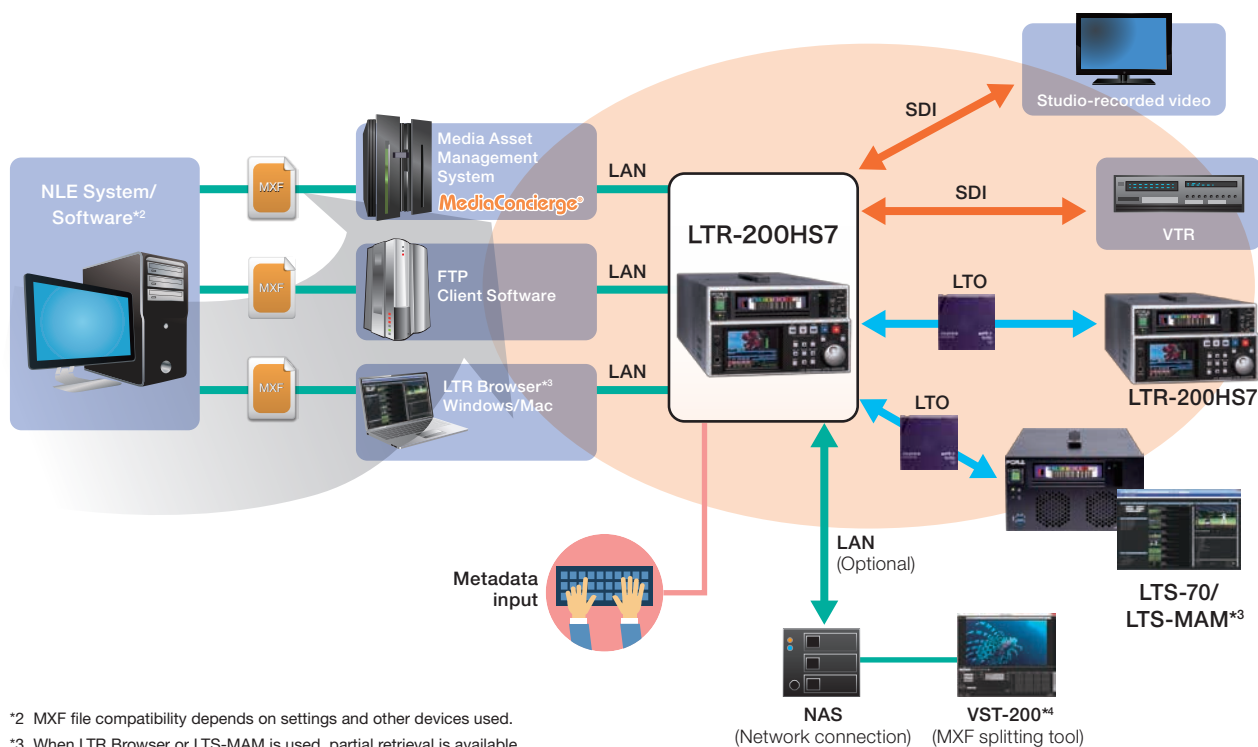
A multi-format LTO-7 archiving recorder that also offers a generous 6 TB of internal storage for backup, the LTR-200HS7's ability to support broad video codecs accommodates many archiving needs. Useful in both archiving and exchange of recorded material or programs, highlights of this full-featured LTFs-based recorder unit include HD/SD-SDI input/output, broadcast-quality codecs, and MXF (OP-1a) wrapping and unwrapping. MXF or MOV files on LTO tape can also be used with NLE systems.

- Converts SDI signals to MXF files*1 and records to LTO tape.
- Archives material from connected VTRs.
- Plays and provides SDI output for MXF files on LTO tape; can also export as MXF files.
- Partial Retrieval: Extract needed segments of video files on LTO tape as separate files.
- LTO Dubbing: Connect another LTR-200HS7 via Ethernet and control duplication from a computer running optional LTS-I-CP software.



*1 MOV files when using Apple ProRes (with optional LTR-PRS)

Workflow



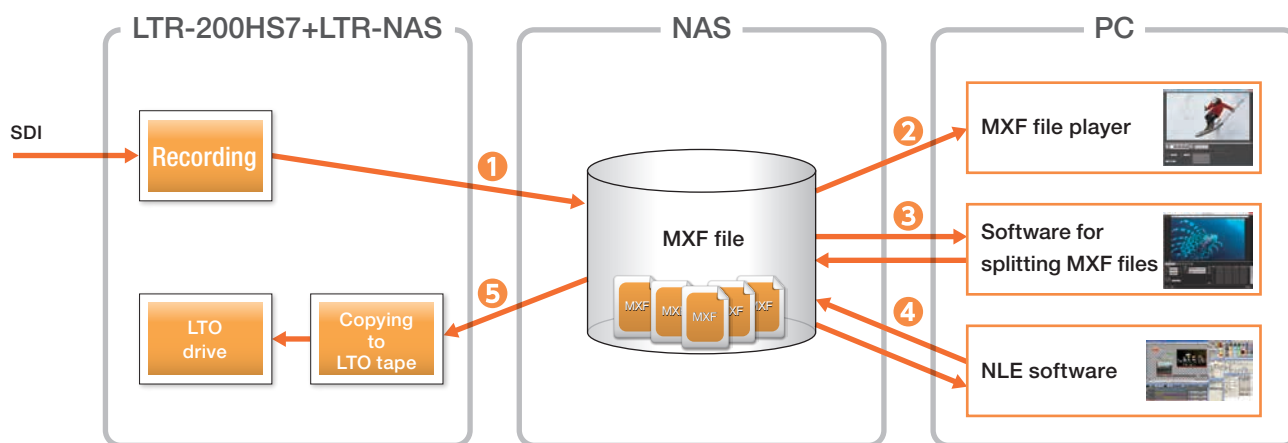
*2 MXF file compatibility depends on settings and other devices used.

*3 When LTR Browser or LTS-MAM is used, partial retrieval is available.

*4 VST-200 can be used to enable MXF file splitting and metadata tagging of entire video-tapes in LTR-200HS7.

LTR-NAS workflow

As material is recorded, export MXF files to a NAS device as they are created, using an optional LTR-NAS plug-in, and then back up the edited MXF files to LTO tape as needed.



1 Copy MXF files to a NAS device as they are recorded.

2 Check MXF playback and retrieve needed programs on a computer.

3 MXF files are checked for discontinuous timecodes, and splitting information is created automatically; each split file can be tagged with metadata.

4 Edit MXF files in an NLE system.

5 Back up MXF files to LTO tape in the LTR-200HS7, using menu operations*5.

*5 Playback and partial retrieval of video files on a NAS device is not possible from LTR-200HS7.

Codecs and formats

Broad codec and format support includes MPEG-2 and AVC-Intra as well as Avid DNxHD®, and DVCPRO. For programs and other assets, the ability to offer this broad support is an advantage in applications that demand high-quality archiving.

Codec	HD/SD	File	Color Depth/Signal	Notes
MPEG-2 HD 18/25/35	HD	MXF OP1a	4:2:0 8-bit	SMPTE RDD9-2009 (SONY XDCAM HD)
MPEG-2 HD422 50	HD	MXF OP1a	4:2:2 8-bit	SMPTE RDD9-2009 (SONY XDCAM HD422)
AVC-Intra 50	HD	MXF OP1a	4:2:0 10-bit	Panasonic P2 Archive
AVC-Intra 100	HD	MXF OP1a	4:2:2 10-bit	Panasonic P2 Archive
DVCPRO HD 100	HD	MXF OP1a	4:2:2 8-bit	Panasonic P2 Archive
Avid DNxHD® 145/220	HD	MXF OP1a	4:2:2 8-bit	
Avid DNxHD® 220x	HD	MXF OP1a	4:2:2 10-bit	
Apple ProRes 422/422 HQ	HD	MOV	4:2:2 10-bit	Optional (LTR-PRS)
DVCPRO25	SD	MXF OP1a	4:1:1 8-bit	Optional (LTR-PD-SD) Panasonic P2 Archive
DVCPRO50	SD	MXF OP1a	4:2:2 8-bit	Optional (LTR-PD-SD) Panasonic P2 Archive

Specifications

Video formats	HD: 1080/59.94i, 1080/50i, 720/59.94p, 720/50p (select at menu) SD: 525/60, 625/50 (select at menu) (optional)	
Removable storage device*1	LTO-7 (Read /Write), LTO-6 (Read /Write), LTO-5 (Read only) (File system: IBM LTF5)	
Supported MXF format	OP-1a (SMPTE RDD-9) HD: MPEG-2 Long GOP	- 50 Mbps (CBR/4:2:2/422P@ML) Audio: 24-bit, 8 ch - 35 Mbps (CBR/4:2:0/MP@HL) Audio: 16-bit, 4 ch - 25 Mbps (CBR/4:2:0/MP@H14) Audio: 16-bit, 4 ch - 18 Mbps (CBR/4:2:0/MP@HL) Audio: 16-bit, 4 ch
	OP-1a HD:	- AVC-Intra 100 (10-bit, 4:2:2) Audio: 24-bit, 8 ch - AVC-Intra 50 (10-bit, 4:2:0) Audio: 24-bit, 8 ch - DVCPRO HD (8-bit, 4:2:2) Audio: 24-bit, 8 ch - Avid DNxHD® 220x (10-bit, 4:2:2) Audio: 24-bit, 8 ch - Avid DNxHD® 220 (8-bit, 4:2:2) Audio: 24-bit, 8 ch - Avid DNxHD® 145 (8-bit, 4:2:2) Audio: 24-bit, 8 ch
	OP-1a SD:	- DVCPRO 50 (8-bit, 4:2:2) Audio: 24-bit, 8ch (optional) - DVCPRO 25 (8-bit, 4:1:1) Audio: 24-bit, 8ch (optional)
	QuickTime/MOV HD:	- Apple ProRes (optional)
Video input	HD-SDI: 1.5 Gbps 75Ω BNC x 1	
Video output	HD-SDI: 1.5 Gbps, 75Ω BNC x 4 (Output 3 and 4 support timecode display)	
Genlock input	HD: BB: NTSC: 0.429 Vp-p/PAL: 0.45 Vp-p or Tri-level sync: 0.6 Vp-p, 75Ω BNC x 1, loop-through (Terminate with 75Ω terminator, if unused)	
Audio input Embedded AES/EBU	The maximum number of output channels varies by MXF format and bitrate. Max. 8 ch (4 stereo pairs) (Group 1 and 2) 48 kHz, synchronous only HD: 1.0 Vp-p, unbalanced, 75Ω, BNC x 2 (2 stereo pairs), 48 kHz, SD: 1.0 Vp-p, unbalanced, 75Ω, BNC x 2 (2 stereo pairs), 48 kHz	
Audio output Embedded AES/EBU	The maximum number of output channels varies by MXF format and bitrate. Max. 8 ch (4 stereo pairs) (Group 1 and 2) 48 kHz, synchronous only HD: 1.0 Vp-p, unbalanced, 75Ω, BNC x 2 (2 stereo pairs), 48 kHz, SD: 1.0 Vp-p, unbalanced, 75Ω, BNC x 2 (2 stereo pairs), 48 kHz	
Time code input	Embedded: Ancillary timecode, LTC: 1.0 Vp-p, unbalanced, 75Ω, BNC x 1	
Time code output	Embedded: Ancillary timecode, LTC: 1.5 Vp-p, unbalanced, 75Ω, BNC x 1	
Recording time	Minimum/file: 1 second, Maximum/file: 24 hours	
Internal storage	6 TB HDD	
Interfaces	RS-422: 9-pin D-sub (female) x 1 (inch screws) (for external VTR control on recording) USB: Front: 2.0 Series A connector x 1 Rear: 3.0 Series A connector x 2 LAN: LAN1/2: 100BASE-TX/1000BASE-T, RJ-45 x 2 To External Drive: Mini-SAS x 1 GPI/ALARM: 15-pin D-sub (female) x 1 - ALARM: Power, Fan alarm (relay contact), GPI: 3-input/3-output (contact input, open collector output) MAINTENANCE: 15-pin mini D-sub (female) (VGA) x 1 (maintenance only)	
Proxy file	Create with MXF file, H.264/MP4 1 Mbps or Windows Media Video 1.5 Mbps	
File input/output	Work as FTP server. Unable to access LTO at once by multiple users.	
Temperature/humidity	10°C to 40°C / 20% to 80% (no condensation)	
Power/consumption	100 V AC to 240 V AC ±10%, 50/60 Hz 160 VA (158 W) at 100 V AC to 120 V AC, 176 VA (144 W) at 220 V AC to 240 V AC	
Dimensions/weight	212 (W) x 130 (H) x 533.5 (D) mm EIA 3 RU half size / 10 kg	
Consumables (if used 24 hours a day at room temperature)	Cooling fan: Replace every 3 years. Power: Replace every 5 years. Battery: Replace every 5 years. Hard disk drive: Replace every 5 years.	
Accessories	Operation manual(CD-ROM), AC Cord (cable retaining clip included), Tutorial Manual, Control software (Installed)	
Options	USB keyboard, USB barcode scanner, 1 year warranty, LTR Browser, LTR-PRS (Apple ProRes supporting Plug-in), LTR-PD-SD (DVCPRO-SD plug-in), LTR-NAS (NAS plug-in)	

*1 Unable to use LTO WORM

LTO Basic Performance

	LTO-5 (Read /Write)*2	LTO-6 (Read /Write)	LTO-7 (Read/Write)
Cartridge size	105 (W) x 22 (H) x 102 (D) mm		
Capacity	Max. 1.5 TB (data area: 1425 GB / 1327 GiB)	Max. 2.5 TB (data area: 2408 GB / 2242 GiB)	Max. 6 TB (data area: 5732 GB / 5335 GiB)
Recording capacity*3			
MPEG-2 50Mbps MXF	Max. 52 hours	Max. 80 hours	Max. 192 hours
AVC-Intra 100 MXF	Max. 25 hours	Max. 40 hours	Max. 96 hours
DNxHD 220x MXF	Max. 11 hours	Max. 18 hours	Max. 43 hours
Response	File body seek time: within three minutes		

*2 Following LTO specifications, reading of LTO-5 tapes (two generations older) is supported, but writing is not.

*3 Theoretical recording capacities excepted of ancillary data and proxy files may decrease, depending on the tape head and tape conditions.

- LTO is a trademark of HP, IBM and Quantum.
- MediaConcierge is a trademark of FOR-A Company Limited.
- Avid DNxHD is a trademark or registered trademark of Avid Technology, Inc. or its subsidiaries in the United States and/or other countries.



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