

CLASS 386, MOTION VIDEO SIGNAL PROCESSING FOR RECORDING OR REPRODUCING

SECTION I - CLASS DEFINITION

This Class provides for apparatus and corresponding methods for processing an electrical signal, representative of a sequence of images, in which the light variation composing the images may change with time (e.g., natural or “live” scenes, etc.) for recording or reproducing.

The processing involves the following steps: (a) receiving an electrical signal representative of a sequence of images from a local (e.g., camera, etc.) or remote source (e.g., broadcasting station, satellite, cable, etc.) and converting the received sequence of images into a form suitable for storage, which form may or may not be reproduced later, or (b) converting retrieved information from a storage medium into a sequence of images.

This Class also provides for apparatus or processes for recording a single image of a sequence of images (i.e., a still or frame) using a dynamic recording device having relative movement between a transducer and a medium.

SCOPE OF THE CLASS

- (1) Note. Significantly claimed apparatus external to this Class, claimed in combination with apparatus under the class definition, which records or reproduces quality or quantity related to such external apparatus or its function, is classified in the class appropriate to the external apparatus.
- (2) Note. Nominally claimed apparatus external to this Class, claimed in combination with apparatus under the class definition, is classified in this Class unless provided for in the appropriate external class.
- (3) Note. This Class is directed to recording and/or reproducing motion video images. Systems which are solely concerned with recording or reproducing of generic data, such as computer generated data, are classified elsewhere. See the SEE OR SEARCH CLASS notes below.
- (4) Note. This Class includes subject matter directed to recording of motion video images which may include audio signals. Systems which are solely concerned with

processing of audio data signals are classified elsewhere. See the SEE OR SEARCH CLASS notes below.

- (5) Note. This Class provides for error or fault detection and/or correction of motion video signals during recording and/or reproduction operations. Systems which are related to generic error or fault detection and/or correction are classified elsewhere. See the SEE OR SEARCH CLASS notes below.
- (6) Note. This Class is limited to recording and/or reproducing of motion video images. Systems which are directed to interactive video transmission or distribution such as interactive video distribution on the internet between a user (i.e., subscriber) and a broadcaster are classified elsewhere. See the SEE OR SEARCH CLASS notes below.
- (7) Note. This Class is limited to locally establishing a user’s profile for the purposes of recording and/or reproduction of motion video images. Systems which are related to remotely establishing user’s profile for targeting or tailoring a broadcast, or generation of a video on demand or near video on demand via internet or server are classified elsewhere. See the SEE OR SEARCH CLASS notes below.
- (8) Note. This Class is limited to local interactions for trick-play processing of motion video images; systems directed to distributing motion video images over a distribution network are classified elsewhere. See the SEE OR SEARCH CLASS notes below.

SECTION II - REFERENCES TO OTHER CLASSES

SEE OR SEARCH CLASS:

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| 29, | Metal Working, subclass 603.01 for method of making magnetic transducers. |
| 84, | Music, subclass 601 for recording or reproducing means in combination with musical instruments. |
| 226, | Advancing Material of Indeterminate Length, appropriate subclasses for means for advancing a record carrier past a transducer. |

- 235, Registers, subclasses 419 through 434 for record controlled electromechanic calculators, and subclass 493 for magnetic records used in a register.
- 242, Winding, Tensioning, or Guiding, subclasses 324 through 358.1 for magnetic tape or film.
- 312, Supports: Cabinet Structure, subclass 7.2 for television cabinets.
- 318, Electricity: Motive Power Systems, subclasses 41 through 44 and 85 for synchronization circuitry; subclass 560 for positional servo systems; and subclasses 567-579 for program or pattern controlled systems.
- 324, Electricity: Measuring and Testing, subclass 112 for voltage or current storage means including magnetic storage; and subclasses 244-259 for magnetic field testing means usable in reproducing magnetic records.
- 329, Demodulators, appropriate subclasses for demodulators usable in magnetic reproduction.
- 330, Amplifiers, appropriate subclasses for amplifiers usable in magnetic recording or reproducing, especially subclass 149 for noise compensation.
- 331, Oscillators, subclass 20 and 172-174 for television-type oscillator synchronization.
- 332, Modulators, appropriate subclasses for modulators usable in magnetic recording.
- 333, Wave Transmission Lines and Networks, subclass 28 for equalizers usable in magnetic recording or reproducing.
- 336, Inductor Devices, appropriate subclasses for core and coil structures similar to those of magnetic recording or reproducing transducers.
- 340, Communications: Electrical, subclasses 825.71 through 825.78 for frequency modulated responsive selective systems; and subclasses 870.18-870.26 for frequency or phase or amplitude modulated telemetry systems.
- 341, Coded Data Generation or Conversion, appropriate subclasses for code converters for using in video recording and reproducing operations.
- 345, Computer Graphics Processing and Selective Visual Display Systems, subclasses 418 through 475 for computer graphics processing; and subclasses 606-610 for use of interpolation for changing surface display attributes of a graphic image.
- 346, Recorders, appropriate subclasses for recorders usually of the graphic type and record carriers therefore.
- 348, Television, appropriate subclasses for TV signal processing, particularly subclass 241 for noise reduction of a video signal for a camera; subclasses 606-624 and 683 for noise reduction or elimination of a TV color signal; subclasses 787 and 789 for projection type image reproducer cabinet or chassis; and subclass 794 for cabinet or chassis of a liquid crystal image reproducer.
- 352, Optics: Motion Pictures, appropriate subclasses for motion picture apparatus in combination with recorders or reproducers.
- 353, Optics: Image Projectors, appropriate subclasses for projectors combined with recorders or reproducers.
- 355, Photocopying, subclass 31 and 98 for copying optical sound records.
- 358, Facsimile and Static Presentation Processing, subclass 3.28 for watermarking in a print processing; and subclasses 296-304 for recording means combined with facsimile.
- 359, Optics: Systems and Elements, subclasses 281 through 283 and subclass 484 for magneto-optical polarization devices usable in magnetic signal reproduction.
- 360, Dynamic Magnetic Information Storage or Retrieval, appropriate subclasses for dynamic magnetic information and storage retrieval and particularly subclass 13 for dynamic magnetic record editing in general; subclasses 15-17 for record copying; subclasses 22-24 for splitting an information signal for recording on plural distinct tracks or reproducing such signal; subclass 60 for dynamic magnetic recording or erasing prevention in general; subclass 124 for crosstalk prevention; subclass 129 for a magnetic head housing, and subclasses 77.14-77.15 for track centering a magnetic head by utilizing pilot signal.
- 361, Electricity: Electrical Systems and Devices, subclass 143, 159, and 267 for demagnetizing means for records and heads when not in combination with recorders or reproducers; and subclasses 600-837 for generic electrical component housing.
- 365, Static Information Storage and Retrieval, appropriate subclasses for the structure of a static storage/retrieval of information.
- 369, Dynamic Information Storage or Retrieval, appropriate subclasses for dynamic optical storage or retrieval of information, particularly subclass 83 for optically editing of dynamic record in general and subclasses 84 and 85 for information copying optically.
- 370, Multiplex Communications, appropriate subclasses for frequency, phase, amplitude or time division multiplexing of a signal.

- 375, Pulse or Digital Communications, appropriate subclasses for digital communication per se, particularly subclasses 130 through 153 for spread spectrum techniques in a digital communication system; subclasses 240.01-240.29 for digital television bandwidth compression systems; subclasses 271-284, 302-308, and 322-337 for frequency or phase modulated carrier wave pulse or digital communications; and subclasses 268-270, 301-302, and 320-321 for amplitude modulated carrier wave pulse or digital communications.
- 379, Telephonic Communications, subclass 41, 51, and 67.1-88.28 for recorders or reproducers combined with telephones.
- 380, Cryptography, subclasses 201 through 204 for cryptographic video copy protection or prevention; and subclasses 210-211 for video scrambling in a cryptographic video copy protection system.
- 381, Electrical Audio Signal Processing Systems and Devices, appropriate subclasses for electrical audio signal handling in general, particularly subclass 106 for amplitude compression or expansion of audio signals.
- 382, Image Analysis, appropriate subclasses for image analysis or pattern recognition, particularly subclasses 260 through 273 for use of image filter in an image analysis system; subclass 300 for using interpolation for image transformation; and subclasses 309-311 for image error checking or correction.
- 396, Photography, appropriate subclasses for pictorial information recording devices.
- 400, Typewriting Machines, subclass 69 for typewriting machines including magnetic storage means for storing retrievable information.
- 455, Telecommunications, appropriate subclasses for transmitters and receivers in general, particularly subclasses 347 through 351 for a radio cabinet, housing, or chassis.
- 700, Data Processing: Generic Control Systems or Specific Applications, subclasses 1 through 89 for generic data processing control systems; and subclasses 90-306 for particular application of data processing systems or calculating computers.
- 704, Data Processing: Speech Signal Processing, Linguistics, Language Translation, and Audio Compression/Decompression, appropriate subclasses for audio signal processing, particularly subclass 278 for sound editing; and subclasses 500-502 for audio signal bandwidth compression or expansion.
- 705, Data Processing: Financial, Business Practice, Management or Cost/Price Determination, subclasses 51 through 59 for cryptographic protection of a distributed financial data file.
- 708, Electrical Computers: Arithmetic Processing and Calculating, subclass 290 for using interpolation in general arithmetic calculation data processing.
- 713, Electrical Computers and Digital Processing Systems: Support, subclasses 176 through 179 for computer communication authentication by utilizing digital watermark; subclasses 300-340 for computer power management; and subclasses 375-401 for synchronization of clock or timing signals in a computer processing system.
- 714, Error Detection/Correction and Fault Detection/Recovery, appropriate subclasses for data error or fault detection or correction in general, particularly subclass 758 for forward data correction by utilizing cyclic redundancy character; and subclasses 800-805 for data error/fault detection by utilizing parity bit.
- 715, Data Processing: Presentation Processing of Document, Operator Interface Processing, and Screen Saver Display Processing, appropriate subclasses for use of graphical user interface, in general.
- 718, Electrical Computers and Digital Processing System: Virtual Machine Task or Process Management or Task Management/Control, subclass 103 for computer task management or control by utilizing priority scheduling.
- 725, Interactive Video Distribution Systems, subclasses 39 through 56 for use of electronic program guide in an interactive video distribution systems; subclasses 109-112 for video transmission or distribution connected to internet or via URL, and subclasses 88 and 102 for trick play processing in a video-on-demand and near video-on-demand systems respectively.
- 726, Information Security, appropriate subclasses for information security techniques in general, particularly subclasses 26 through 30 for prevention of unauthorized use of data and access control of data in general.

SUBCLASSES

200 WITH INTERFACE BETWEEN RECORDING/REPRODUCING DEVICE

- AND AT LEAST ONE OTHER LOCAL DEVICE:**
This subclass is indented under the class definition. Subject matter comprising means or steps for providing communication or controlling between the recording/reproducing device and an additional device located close by, such as within a home.
- 201 Synchronization:**
This subclass is indented under subclass 200. Subject matter comprising means or steps for generating or detecting pulses at rates related to line and field/frame frequencies of a video signal for performing synchronization process among different components of a recording or reproducing operation or with another local device.
- SEE OR SEARCH CLASS:
348, Television, subclasses 500 through 551 for generation and control of TV synchronization signal.
713, Electrical Computers and Digital Processing Systems: Support, subclasses 375 through 401 for synchronization of clock or timing signals in a computer processing system.
- 202 External synchronization for phase or frequency correction:**
This subclass is indented under subclass 201. Subject matter comprising means or steps for correcting phase or frequency deviations during recording or reproducing operation from an externally provided synchronization signal.
- 203 With variable delay:**
This subclass is indented under subclass 201. This subclass is indented Subject matter comprising means or steps for providing an alterable or adjustable delay time to correct or compensate synchronization deviations of a recording or reproducing device.
- 203 With variable delay:**
This subclass is indented under subclass 201. This subclass is indented Subject matter comprising means or steps for providing an alterable or adjustable delay time to correct or compensate synchronization deviations of a recording or reproducing device.
- 204 With phase lock loop (e.g., ProcAmp, PLL, etc.):**
This subclass is indented under subclass 201. Subject matter comprising means or steps for generating a signal that has a fixed relation to the phase of a reference signal for correcting synchronization deviations of a recording or reproducing device.
- 205 For tape trick play:**
This subclass is indented under subclass 201. Subject matter comprising means or steps for detecting and/or generating synchronization signals during trick play modes of operation of a tape type recording or reproducing device.
- (1) Note. Trick play herein refers to reproduction of a video from a medium at speeds other than normal playback speed.
- 206 For disk/disc trick play:**
This subclass is indented under subclass 201. Subject matter comprising means or steps for detecting and/or generating synchronization signals during trick play modes of operation of a disk/disc type recording or reproducing device.
- 207 Synchronization correction:**
This subclass is indented under subclass 201. Subject matter comprising means or steps for correcting a video synchronization signal by adding to or substituting a synchronization signal.
- 208 Sync block:**
This subclass is indented under subclass 201. Subject matter comprising means or steps for using a synchronization code and an associated address code, i.e., sync block, for controlling tracking of a head to a specific position of the tracks in a recording and reproducing device.
- (1) Note. The sync blocks are generated during a recording operation and utilized for tracking during the reproducing operation.
- 209 Analog camera source to analog recorder:**
This subclass is indented under subclass 201. Subject matter comprising means or steps for synchronizing video signals between an analog

- camera/CCD and an analog recorder to facilitate recording operation there between.
- 210 Camera source to digital recording device:**
This subclass is indented under subclass 201. Subject matter comprising means or steps for synchronizing a camera/CCD source to a digital recorder to facilitate recording operation there between.
- 211 MPEG recorder (e.g., Time, PTS, DTS, STC, PCR, etc.):**
This subclass is indented under subclass 210. Subject matter comprising means or steps for a recorder to facilitate MPEG recording.
- (1) Note. Examples of MPEG timing signals are presentation time stamp (PTS), decoding time stamps (DTS), system time clock (STC), or program clock reference (PCR).
- 212 Analog tuner to analog recorder:**
This subclass is indented under subclass 201. Subject matter comprising means or steps for synchronizing an analog tuner to an analog recorder.
- 213 Tuner source to digital recorder:**
This subclass is indented under subclass 201. Subject matter comprising means or steps for synchronizing a tuner source to a digital recorder.
- 214 MPEG digital tuner to MPEG recorder (e.g., Time, PTS, DTS, STC, PCR, etc.):**
This subclass is indented under subclass 213. Subject matter comprising means or steps for synchronizing an MPEG digital tuner to an MPEG recorder.
- 215 Analog playback device to analog recorder:**
This subclass is indented under subclass 201. This subclass indented Subject matter comprising means or steps for synchronizing an analog playback device to an analog recorder.
- 216 Playback device to digital recorder:**
This subclass is indented under subclass 201. Subject matter comprising means or steps for synchronizing a playback device to a digital recorder.
- 217 MPEG playback device to MPEG recorder (e.g., Time, PTS, DTS, STC, PCR, etc.):**
This subclass is indented under subclass 216. Subject matter comprising means or steps for synchronizing an MPEG playback device to an MPEG recorder.
- 218 Analog playback device to display device:**
This subclass is indented under subclass 201. Subject matter comprising means or steps for synchronizing an analog playback device to a display device.
- 219 Digital playback device to display device:**
This subclass is indented under subclass 201. Subject matter comprising means or steps for synchronizing a digital playback device to a display device.
- 220 MPEG playback device to display device (e.g., Time, PTS, DTS, STC, PCR, etc.):**
This subclass is indented under subclass 219. Subject matter comprising means or steps for synchronizing an MPEG playback device to an MPEG display device.
- 221 Controlling speed of tape:**
This subclass is indented under subclass 201. Subject matter wherein the detected synchronization signal is utilized for dictating or controlling speed of a tape medium, e.g., for preventing video losses, etc.
- 222 Controlling speed of disk:**
This subclass is indented under subclass 201. Subject matter wherein the detected synchronization signal is utilized for dictating or controlling speed of a disk medium, e.g., for preventing video losses, etc.
- 223 With plural cameras (e.g., multi-scene or angles, etc.):**
This subclass is indented under subclass 200. Subject matter wherein the other local devices comprise more than one camera for providing video signals either selectively or simultaneously for recording.
- (1) Note. When recording of multiple signals are done, the video signals are normally simultaneously multiplexed.

- SEE OR SEARCH THIS CLASS, SUB-CLASS:
 235, through 238, for systems adapted to perform simultaneous recording and reproduction operations.
 337, for multiplexing a video signal with another signal.
 341, for simultaneous recording of plural video signals.
- 224 Camera and recording device:**
 This subclass is indented under subclass 200. Subject matter wherein the other local device is a video camera for converting optical images into video signals for later processing and recording.
- 225 Having still mode:**
 This subclass is indented under subclass 224. Subject matter wherein the camera device includes means or steps for capturing still images.
- (1) Note. The video camera in this subclass performs selectively or simultaneously still mode (i.e., single frame image) or video mode operation (i.e., continuous series of frames).
- 226 Having time lapse recording mode (e.g., surveillance recording, etc.):**
 This subclass is indented under subclass 224. Subject matter comprising means or steps for recording images intermittently thereby thinning images or not recording all images from the video camera.
- (1) Note. Time lapse recording mode is utilized in surveillance recording devices.
- 227 Camera with additional external sensor (e.g., white balance, GPS, wheel, etc.):**
 This subclass is indented under subclass 224. Subject matter wherein the camera device includes a means for generating additional information of the environment associated with the camera to be used and/or stored for later use.
- (1) Note. Examples of the additional external sensors associated with camera are white balance sensor, GPS, or wheel sensor for detecting movement of camera.
- 228 Having triggered event:**
 This subclass is indented under subclass 224. Subject matter comprising means or steps for generating a triggered event to change a present operational mode of the recording device.
- (1) Note. The change of the video recording mode may include marking based on the triggered events.
- (2) Note. Based on the triggered event, the camera may include marking for identification purposes.
- (3) Note. Example of such operation mode is from time lapse mode to full video recording (e.g., 30-frames/sec NTSC, etc.).
- 229 Delayed decision event (e.g., preserving time previous to trigger, loop-recording, etc.):**
 This subclass is indented under subclass 228. Subject matter comprising means or steps for providing a period prior to the occurrence of the triggered event or point thereby preserving the captured video signal.
- 230 With a display/monitor device:**
 This subclass is indented under subclass 200. Subject matter wherein the other local device is a display device for rendering a captured video signal.
- 231 Digital interface (e.g., 1394/USB, etc.):**
 This subclass is indented under subclass 200. Subject matter wherein the interface circuitry or coupling is a digital interface.
- (1) Note. Examples of such digital interface coupling is IEEE 1394 (i.e., firewire) or USB.
- 232 Format conversion (e.g., PAL, NTSC, HD, etc.):**
 This subclass is indented under subclass 200. Subject matter wherein the interface comprises means or steps for modifying a video signal by changing a number of lines per frame and/or frames per second and/or from an interlace to a progressive scanning or vice versa format.

SEE OR SEARCH CLASS:

348, Television, subclasses 441 through 459 for format conversion of a TV video signal in general.

233 Telecine:

This subclass is indented under subclass 232. Subject matter wherein the interface comprises means or steps for converting motion picture film at 24 frames per second to a video format.

- (1) Note. Video format includes, for example, NTSC (i.e., 3:2), PAL or HD.

SEE OR SEARCH CLASS:

348, Television, subclass 97 for use of telecine device for format conversion in television environment.

234 Remote control:

This subclass is indented under subclass 200. Subject matter comprising means or steps for remotely controlling the operation of the recording/reproducing device.

- (1) The remote controlling is performed by a handheld remote control device.

235 VIDEO APPARATUS FOR PERFORMING SIMULTANEOUS RECORDING AND REPRODUCING OPERATIONS (E.G., DOUBLE-TAPE DECKS, ETC.):

This subclass is indented under the class definition. Subject matter comprising means or steps for performing recording and reproducing operations at the same time.

- (1) Note. Examples of such devices are double or triple deck units or a combination of disk and/or tape decks.

236 Single unit system having two separate heads or double ported RAM:

This subclass is indented under subclass 235. Subject matter wherein the simultaneous recording and reproducing operations are done by at least two separate heads or a double ported RAM.

- (1) Note. Each head performs independent recording or reproducing operations.

SEE OR SEARCH CLASS:

711, Electrical Computers and Digital Processing Systems: Memory, subclass 149 for storage and retrieval of data from a multiport memory.

237 Single unit having head with shared read/write operation:

This subclass is indented under subclass 235. Subject matter comprising means or steps for performing simultaneous recording and reproducing operations by utilizing a single head which is time-shared.

- (1) Note. Timed-shared herein means that the head either performs recording or reproducing one at the time.

- (2) Note. In order for the single head to be time-shared between read and write operations, I/O buffering is a requirement.

238 Setting program event (e.g., using EPG, showing time line, TOC, etc.):

This subclass is indented under subclass 235. Subject matter comprising means or steps for setting program events related to simultaneous recording and/or reproducing operations.

- (1) Note. Examples of program events include electronic program guide (i.e., EPG), time line or table of contents (i.e., TOC).

239 PROCESS OF GENERATING ADDITIONAL DATA DURING RECORDING OR REPRODUCING (E.G., VITC, VITS, ETC.):

This subclass is indented under the class definition. Subject matter comprising means or steps for inserting and/or extracting attributes or selected data from the video signal used for various purposes.

- (1) Note. Examples of additional data are access points, entry or marks information used for playback, trick play, or editing purposes.

240 Non-motion video content (e.g., URL, HTML, etc.):

This subclass is indented under subclass 239. Subject matter comprising means or steps for extracting or superimposing an object on the video signal from a non-motion video content source.

- (1) Note. Examples of such a non-motion video content are HTML or URL information.

SEE OR SEARCH CLASS:

715, Data Processing: Presentation Processing of Document, Operator Interface Processing, and Screen Saver Display Processing, subclass 513 for structured document presentation processing.

725, Interactive Video Distribution Systems, subclasses 109 through 112 for video transmission or distribution connected to internet or via URL.

241 Video or audio bookmarking (e.g., bit rate, scene change, thumbnails, timed, entry points, user manual initiated, etc.):

This subclass is indented under subclass 239. Subject matter comprising means or steps for generating identification points selectively associated with the video or audio signals for bookmarking.

- (1) Note. Examples of such bookmark points are date, bit rate, attributes, specified timing, or scene change.

SEE OR SEARCH CLASS:

704, Data Processing: Speech Signal Processing, Linguistics, Language Translation, and Audio Compression/Decompression, subclass 278 for sound editing.

242 Video camera-related attribute analysis (e.g., shake, zooming, dollying, tilting, panning, moving sensor, etc.):

This subclass is indented under subclass 239. Subject matter comprising means or steps for determining various attributes related to the functionality of the video camera system.

- (1) Note. Examples of such attributes include camera shake, zooming, dollying, panning or tilting.

- (2) Note. Purpose of these detected attributes are for storage, retrieval, identification, or editing.

243 Having table of contents user interface:

This subclass is indented under subclass 239. Subject matter comprising means or steps for visually and/or graphically displaying the generated additional data or attributes in a table or listed format.

- (1) Note. This subclass includes visually shown bookmarks, entry points, indexes, or thumbnail images.

SEE OR SEARCH CLASS:

715, Data Processing: Presentation Processing of Document, Operator Interface Processing, and Screen Saver Display Processing, appropriate subclasses for use of graphical user interface in general.

725, Interactive Video Distribution Systems, subclasses 39 through 56 for use of electronic program guide in an interactive video distribution systems over internet or a server.

244 Character codes:

This subclass is indented under subclass 239. Subject matter wherein the additional data are character codes.

- (1) Note. Character codes herein include, for example, sub-picture text or event titles.

245 Teletext or blanking interval data (e.g., VBI, line 21, etc.):

This subclass is indented under subclass 239. Subject matter comprising means or steps for either extracting embedded data or embedding data to and/or from the blanking regions of a video signal or line 21 of the video signal.

- (1) Note. The blanking region herein refers to vertical or horizontal blanking periods.

- 246 Sub-code area:**
This subclass is indented under subclass 239. Subject matter comprising means or steps for encoding the additional data into a channels region of a storage medium.
- 247 Using auxiliary memory (e.g., tape chip, static memory, etc.):**
This subclass is indented under subclass 239. Subject matter comprising means or steps for utilizing additional storage attached to a video cassette tape for storing the additional data associated with stored information of the video tape.
- (1) Note. The additional storage may include tape chip or static memory storage device.
- (2) Note. The additional information may be table of content (i.e., TOC) or edit decision list (i.e., EDL).
- 248 Additional data controlling recording or playback operation:**
This subclass is indented under subclass 239. Subject matter comprising means or steps for utilizing the additional data for controlling the recording and/or playback operations.
- (1) Note. The additional data could dictate what can be recorded or reproduced.
- 249 Commercial identification (e.g., video and/or audio detectors, etc.):**
This subclass is indented under subclass 248. Subject matter comprising means or steps for determining and/or generating commercial locations from the processing of the video and/or audio signals.
- 250 Marking commercial locations:**
This subclass is indented under subclass 249. Subject matter comprising means or steps for marking the commercial locations of the video signal on a medium.
- (1) Note. The markings could be stored in a file on a storage device.
- 251 Commercial elimination during recording:**
This subclass is indented under subclass 249. Subject matter comprising means or steps for pausing or not recording the commercial locations or sections of the video signals during recording.
- 252 Video copy protection (e.g., anti-copy, etc.):**
This subclass is indented under subclass 248. Subject matter comprising means or steps for inhibiting recording, later re-recording, or playback operations.
- (1) Note. Means for inhibiting includes additional signals or pulses mixed to the video signal.
- SEE OR SEARCH CLASS:
- 360, Dynamic Magnetic Information Storage or Retrieval, subclass 60 for dynamic magnetic recording or erasing prevention in general.
- 380, Cryptography, subclasses 201 through 204 for cryptographic video copy protection or prevention and subclasses 210-211 for video scrambling in a cryptographic video copy protection system.
- 705, Data Processing: Financial, Business Practice, Management or Cost/Price Determination, subclasses 51 through 59 for cryptographic protection of a distributed data file.
- 253 Having code table (e.g., CGMS, etc.):**
This subclass is indented under subclass 252. Subject matter comprising means or steps for comparing a code in the video signal for dictating whether recording is permitted.
- (1) Note. Examples of code tables are CGMS, macrovision, or other standard table.
- 254 Degrade/modify part of the video signal levels (e.g., back or front porch color burst, etc.):**
This subclass is indented under subclass 252. Subject matter comprising means or steps for modifying or degrading the video signal to make it less usable or desirable during reproduction of the video signal.

- (1) Note. The video signal could be rendered, but recopying of the same video would result in an undesirable video quality, i.e., destroying the commercial viability of the recorded video signal.

255 Defeating anti-copy modification (e.g., descrambler, etc.):

This subclass is indented under subclass 254. Subject matter comprising means or steps for reversing the degraded video signal to make it more usable or desirable.

- (1) Note. This subclass includes systems having means for disabling or reversing the effect of inhibiting recording, later re-recording, or playback operations.

256 With spread spectrum (e.g., PN sequence, etc.):

This subclass is indented under subclass 252. Subject matter comprising means or steps for superimposing a secure signal encoded with a copy protected data on the video signal.

SEE OR SEARCH CLASS:

- 375, Pulse or Digital Communications, subclasses 130 through 153 for spread spectrum techniques in a digital communication system.

257 Diverse video copy protection:

This subclass is indented under subclass 252. Subject matter comprising means or steps for subjecting the video signal to combined video copying protection techniques.

258 Video scrambler:

This subclass is indented under subclass 252. Subject matter comprising means or steps for transposing or inverting whole or parts of video scan lines to hide or remove horizontal or vertical sync pulses for making the video information unintelligible.

SEE OR SEARCH CLASS:

- 358, Facsimile and Static Presentation Processing, subclass 3.28 for watermarking in a print processing.

- 713, Electrical Computers and Digital Processing Systems: Support, subclasses 176 through 179 for computer communication authentication by utilizing digital watermark.

- 726, Information Security, appropriate subclasses for information security techniques in general.

259 Video encryption:

This subclass is indented under subclass 252. Subject matter comprising means or steps for transforming video information to make it unreadable or to conceal or obscure intelligible video information.

- (1) Note. The unreadable, concealed, or obscured intelligible video information would become readable and intelligible video information if a user or a receiver unit possess a special knowledge, usually referred to as a key.

SEE OR SEARCH CLASS:

- 380, Cryptography, subclasses 201 through 204 for cryptographic video copy protection or prevention and subclasses 210-211 for video scrambling in a cryptographic video copy protection system.
- 705, Data Processing: Financial, Business Practice, Management or Cost/Price Determination, subclasses 51 through 59 for cryptographic protection of a distributed data file.
- 713, Electrical Computers and Digital Processing Systems: Support, subclasses 150 through 194 for use of cryptography techniques in multicomputer data processing.

260 Video watermarking:

This subclass is indented under subclass 252. Subject matter comprising means or steps for placing, superimposing, or embedding logo, text, copyright label, or other types of information over video information for identifying a product thereby discouraging counterfeiting.

SEE OR SEARCH CLASS:

- 358, Facsimile and Static Presentation Processing, subclass 3.28 for watermarking in a print processing.

- 713, Electrical Computers and Digital Processing Systems: Support, subclasses 176 through 179 for computer communication authentication by utilizing digital watermark.
- 261 Parental control (e.g., G, PG, R, X, etc.):**
This subclass is indented under subclass 248. Subject matter comprising means or steps for providing a capability to monitor or limit what a child can see or record.
- (1) Note. Examples of parental capability includes utilization of password, key, or hardware switches.
- SEE OR SEARCH CLASS:
726, Information Security, subclasses 26 through 30 for prevention of unauthorized use of data and access control of data in general.
- 262 Playback based on user profile (e.g., Abecassis, etc.):**
This subclass is indented under subclass 248. Subject matter comprising means or steps for enabling playback operation based on preferences or characteristic usage of a user.
- (1) Note. Examples of profile includes levels of nudity, vulgarity, age, sexual content, violence, G-, PG-, or R-rated.
- 263 ERROR OR FAULT DETECTION DURING RECORDING OR REPRODUCING OPERATION FOR VIDEO SIGNAL:**
This subclass is indented under the class definition. Subject matter comprising means or steps for detecting anomalies or abnormalities during recording or reproducing operations.
- SEE OR SEARCH CLASS:
382, Image Analysis, subclasses 309 through 311 for image error checking or correction in an image analysis system.
714, Error Detection/Correction and Fault Detection/Recovery, appropriate subclasses for error or fault detection or correction in general.
- 264 Video compensation or correction:**
This subclass is indented under subclass 263. Subject matter comprising means or steps for substituting or rectifying the detected errors or faults in the video signal during recording or reproducing operations.
- 265 With redundancy (e.g., raid 0-5, etc.):**
This subclass is indented under subclass 264. Subject matter wherein the video compensation or correction is done by duplicating or repeating video data signal.
- (1) Note. Included herein are data signal file management associated with the video data.
- SEE OR SEARCH CLASS:
714, Error Detection/Correction and Fault Detection/Recovery, subclass 758 for forward correction by utilizing cyclic redundancy character.
- 266 Video shuffling:**
This subclass is indented under subclass 264. Subject matter wherein the video compensation is done by spreading or separating the detected errors or faults over the video signal or bit stream.
- (1) Note. The video shuffling technique spreads loss of video signals upon detection of error or fault to prevent medium damage or data loss.
- 267 Using memory:**
This subclass is indented under subclass 266. Subject matter utilizing memory for performing the video shuffling process.
- 268 Parity coding video (inner/outer):**
This subclass is indented under subclass 264. Subject matter comprising means or steps for performing code error evaluations of the video signal.
- SEE OR SEARCH CLASS:
714, Error Detection/Correction and Fault Detection/ Recovery, subclasses 800 through 805 for error/fault detection by utilizing parity bit.
- 269 Equalizer/filter video signal (e.g., noise pre-emphasis, etc.):**
This subclass is indented under subclass 264. Subject matter comprising means to nullify or subtract noise in the video signal.

SEE OR SEARCH CLASS:

- 348, Television, subclass 241 for noise reduction of a video signal for a camera, and subclasses 606-624 and 683 for noise reduction or elimination of a color TV signal.
- 382, Image Analysis, subclasses 260 through 273 for use of image filter in an image analysis system.

270 Drop-out detection:

This subclass is indented under subclass 263. Subject matter comprising means or steps for detecting video losses during recording or reproducing operations

271 Interpolation:

This subclass is indented under subclass 270. Subject matter comprising means or steps for replacing or inserting a related video signal in order to compensate for video drop-outs or losses.

SEE OR SEARCH CLASS:

- 345, Computer Graphics Processing and Selective Visual Display Systems, subclasses 606 through 610 for use of interpolation for changing surface display attributes of a graphic image.
- 382, Image Analysis, subclass 300 for using interpolation for image transformation.
- 708, Electrical Computers: Arithmetic Processing and Calculating, subclass 290 for using interpolation in general arithmetic calculation data processing.

272 Using static memory:

This subclass is indented under subclass 271. Subject matter comprising a static memory for performing the interpolation processing of the video drop-outs.

273 Tracking crosstalk:

This subclass is indented under subclass 263. Subject matter comprising means or steps for adjusting tracking of a head to reduce or eliminate noise caused by interface between two reproduced channels.

SEE OR SEARCH CLASS:

- 360, Dynamic Magnetic Information Storage or Retrieval, subclasses 77.01 through 78.15 for track centering and changing in a dynamic magnetic storage or retrieval device.

274 Phase-crosstalk:

This subclass is indented under subclass 273. Subject matter comprising means or steps for compensating and correcting phase-crosstalk due to tracking deviation of heads during video tape reproducing operation.

SEE OR SEARCH CLASS:

- 360, Dynamic Magnetic Information Storage or Retrieval, subclass 124 for crosstalk prevention.

275 Pilot signal (e.g., helical, etc.):

This subclass is indented under subclass 273. Subject matter comprising means or steps for recording and/or reproducing of multiple frequency signal for adjusting tracking deviation.

SEE OR SEARCH CLASS:

- 360, Dynamic Magnetic Information Storage or Retrieval, subclasses 77.14 through 77.15 for track centering a magnetic head by utilizing pilot signal.

276 Envelop detection:

This subclass is indented under subclass 273. Subject matter comprising means or steps for detecting a waveform of a modulated video signal during reproduction in order to adjust or correct tracking deviations.

277 Power fault detection and compensation:

This subclass is indented under subclass 263. Subject matter comprising means or steps for detecting and compensating for power failure in a recording or reproducing device.

- (1) Note. Included herein are power management data files.

SEE OR SEARCH CLASS:

- 713, Electrical Computers and Digital Processing Systems: Support, subclasses 300 through 340 for computer power controlling.

278 VIDEO EDITING:

This subclass is indented under the class definition. Subject matter comprising means or steps for modifying a previously recorded video signal.

- (1) Note. This modification includes, for example, deleting from, adding to, or rearranging portions of a previously recorded video signal.

SEE OR SEARCH CLASS:

- 360, Dynamic Magnetic Information Storage or Retrieval, subclass 13 for dynamic magnetic record editing in general.
- 369, Dynamic Information Storage or Retrieval, subclass 83 for editing of dynamic record in general.
- 715, Data Processing: Presentation Processing of Document, Operator Interface Processing, and Screen Saver Display Processing, subclasses 723 through 726 for computer generated video editing by utilizing a GUI.

279 Dubbing or mastering (e.g., normal and high speed, etc.):

This subclass is indented under subclass 278. Subject matter comprising means or steps for copying video signal from a first medium to a second medium.

- (1) Note. Dubbing can be done at normal or higher speed.
- (2) Note. The second medium could be any combination of sequential or random-type media.

SEE OR SEARCH CLASS:

- 360, Dynamic Magnetic Information Storage or Retrieval, subclasses 15 through 17 for record copying.
- 369, Dynamic Information Storage or Retrieval, subclass 84 and 85 for information copying.

280 Special effect:

This subclass is indented under subclass 278. Subject matter comprising means or steps for editing the video signal by adding transitional effects to the video signal.

- (1) Note. Special effects herein include transition between video segments or clips for performing video filtering to cause, for example, blurring, smoothing, etc.

SEE OR SEARCH CLASS:

- 348, Television, subclasses 578 through 601 for adding special effects to a TV signal.

281 Edit decision list (e.g., EDL, etc.):

This subclass is indented under subclass 278. Subject matter comprising means or steps for creating a file list of instructions for the video editing.

- (1) Note. EDL list is created and utilized in on-line or off-line editing operations.

282 With video GUI:

This subclass is indented under subclass 278. Subject matter comprising graphical user interface for performing video segment editing.

- (1) Note. GUI herein is utilized for graphical representation of edit segments or transition such as merging, fading, or cross-fading.

SEE OR SEARCH CLASS:

- 715, Data Processing: Presentation Processing of Document, Operator Interface Processing, and Screen Saver Display Processing, subclasses 723 through 726 for computer generated video editing by utilizing a GUI.

283 With MPEG:

This subclass is indented under subclass 278. Subject matter comprising means or steps for editing a video signal encoded in accordance to MPEG standards.

- (1) Note. MPEG standards are I, P, B encoded video frames.

284 With different standards:

This subclass is indented under subclass 278. Subject matter comprising means or steps for editing video signals of diverse formats.

- (1) Note. Different standards herein include, for example, compression standard or

video standards such as NTSC, PAL, or SECAM, etc.

285 With at least one audio signal:

This subclass is indented under subclass 278. Subject matter comprising means or steps for editing an audio signal.

- (1) Note. Examples of audio editing include audio clip editing or audio clip transition.

SEE OR SEARCH CLASS:

704, Data Processing: Speech Signal Processing, Linguistics, Language Translation, and Audio Compression/Decompression, subclass 278 for sound editing.

286 Subsequent recording:

This subclass is indented under subclass 278. Subject matter comprising means or steps for recording video signals to empty, unused, or blank areas of a storage medium after completion of an initial recording operation.

287 Replacing signal (e.g., video or audio, etc.):

This subclass is indented under subclass 286. Subject matter comprising means or steps for recording video signals after an initial or original video recording operation by either replacing, overwriting, or adding a video signal to the original video signal.

- (1) Note. The subsequent recording maybe done on unused or blank areas of storage medium.

288 Reproducing from medium and re-recording back to same medium:

This subclass is indented under subclass 286. Subject matter comprising means or steps for reproducing a video signal from a first medium and reprocessing and re-recording back the video signal to the same medium.

289 Having erasing head:

This subclass is indented under subclass 278. Subject matter wherein the video editing is performed by utilizing a head to remove a signal.

SEE OR SEARCH CLASS:

360, Dynamic Magnetic Information Storage or Retrieval, subclass 57, 66, and 118 for various erasing operations.

369, Dynamic Information Storage or Retrieval, subclass 13.04 for erasing data in a dynamic optical storage or retrieval device.

290 User defined sequence (e.g., virtual link list, double link list, etc.):

This subclass is indented under subclass 278. Subject matter comprising means or steps for linking of non-sequential video segments for playback.

- (1) Note. This subclass includes virtual editing, which is the generation of a virtual link list for output rendering.

291 PROGRAMMABLE RECORDER:

This subclass is indented under the class definition. Subject matter comprising means or steps for performing a future recording or reproducing event based on a stored scheduled or timed command.

- (1) Note. An event is the commencement or ending of a recording or reproducing process.

SEE OR SEARCH CLASS:

348, Television, subclasses 731 through 734 for tuning of a receiver and for remote control of a receiver.

725, Interactive Video Distribution Systems, subclasses 37 through 61 for setting interactive recording or reproduction events.

292 Recording event conflict resolution (e.g., program space, time overrun, two-event conflict, etc.):

This subclass is indented under subclass 291. Subject matter comprising means or steps for resolving conflicting recording events.

- (1) Note. Examples of conflicting events include program space, time overrun, or two-event conflict.

293 Program event priority:

This subclass is indented under subclass 292. Subject matter comprising means or steps for setting a priority between occurrences of two simultaneous recording events.

SEE OR SEARCH CLASS:

718, Electrical Computers and Digital Processing Systems: Virtual Machine Task or Process Management or Task Management/Control, subclass 103 for computer task management or control by utilizing priority scheduling.

294 Space resolution:

This subclass is indented under subclass 292. Subject matter comprising means or steps for resolving space or size storage for recording of an incoming video signal.

- (1) Note. Examples of space resolution include setting of recording speed (i.e., SP, LP, EP), setting video compression ratio, or by transcoding, which involves decompression and recompression of the same video signal.

295 Space management (e.g., erasure plan, FIFO, alternate storage, etc.):

This subclass is indented under subclass 292. Subject matter comprising means or steps for establishing or finding a suitable storage space for a recording event.

- (1) Note. Space management herein includes either overwriting an existing video recording section by either a FIFO or a priority erasure plan or use of an alternate storage device.

296 Automatic program events (e.g., profile, etc.):

This subclass is indented under subclass 291. Subject matter comprising means or steps for the video recording system to automatically set at least one event in response to a user profile or attribute, e.g., a recording title or a recording time, etc.

- (1) Examples of a user profile or attribute are a recording title or a recording time.

SEE OR SEARCH CLASS:

725, Interactive Video Distribution Systems, subclass 46 for using electronic program guide based on a user's profile or preference.

297 Electronic program guide (e.g., EPG, TOC-EPG, etc.):

This subclass is indented under subclass 291. Subject matter wherein the future recording or reproduction of events is set by a user in accordance with an electronic program guide.

- (1) Note. The electronic program guide may include a series of program playback events.
- (2) Note. The electronic program guide herein is locally generated or interacted with. For EPG, wherein a user interacts with a broadcaster via a server, classification is elsewhere.

SEE OR SEARCH CLASS:

725, Interactive Video Distribution Systems, subclasses 39 through 55 for using electronic program guide such that a user interacts with a broadcaster via a server.

298 Delayed decision recording event:

This subclass is indented under subclass 291. Subject matter comprising means or steps for making a decision for preserving a recording event at a later time or a shifted-time from the beginning of a program recording event.

299 Remote event setting (e.g., phone line, e-mail, etc.):

This subclass is indented under subclass 291. Subject matter comprising means or steps for remotely setting recording events.

- (1) Note. The remote operation is, for example, performed via telephone, internet, or e-mail, etc.

300 COLOR VIDEO SIGNAL PROCESSING:

This subclass is indented under the class definition. Subject matter comprising means or steps for processing of a color component or attribute of a video signal for recording or reproducing purposes.

- (1) Note. Color components include chrominance and luminance.
- SEE OR SEARCH CLASS:
345, Computer Graphics Processing and Selective Visual Display Systems, subclasses 589 through 605 and 690-697 for graphic image and display color processing.
348, Television, appropriate subclasses for color TV signal processing.
382, Image Analysis, subclasses 162 through 167 for color image analysis.
- 301 Color killer:**
This subclass is indented under subclass 300. Subject matter comprising means or steps for generating a black and white video signal by suppressing or eliminating the color components of the video signal.
- SEE OR SEARCH CLASS:
348, Television, subclass 643 and 644 for utilizing color killer in television device.
- 302 Separating color components:**
This subclass is indented under subclass 300. Subject matter comprising means or steps for differentiating color components or attributes.
- 303 By comb filter:**
This subclass is indented under subclass 302. Subject matter wherein the separation of color components is done by use of a delay line and comparing the original and delayed signals to isolate the chrominance components.
- SEE OR SEARCH CLASS:
348, Television, subclasses 665 through 670 for utilizing a comb filter for separating color components of a TV signal.
- 304 Amplitude level control (e.g., AGC, etc.):**
This subclass is indented under subclass 300. Subject matter comprising means or steps for controlling amplitude of video color signals during recording or reproducing operations.
- 305 Color burst signal:**
This subclass is indented under subclass 304. Subject matter comprising means or steps for controlling the amplitude level of a color burst component of the video signal.
- (1) Note. Color burst signal is also called a reference burst signal utilized for establishing a frequency and phase reference signal for the chrominance signal.
- 306 Channel splitting:**
This subclass is indented under subclass 300. Subject matter comprising means or steps for separating the color signal into separate components inputted into two or more paths before recording.
- SEE OR SEARCH CLASS:
360, Dynamic Magnetic Information Storage or Retrieval, subclasses 22 through 24 for splitting information signal for recording on plural distinct tracks or reproducing such signal.
- 307 Frequency modulation of luminance or chrominance:**
This subclass is indented under subclass 306. Subject matter comprising means or steps for frequency modulating luminance or chrominance components of the color signal wherein the luminance and chrominance components occupy different frequency bands on a medium.
- (1) Note. The specific frequency modulator or demodulator circuitry includes, for example, frequency mixer, converter, or shifter.
- SEE OR SEARCH CLASS:
332, Modulators, subclasses 117 through 143 for frequency modulator, per se.
340, Communications: Electrical, subclasses 825.71 through 825.78 for frequency modulated responsive selective systems and subclasses 870.18-870.26 for frequency or phase or amplitude modulated telemetry systems.
348, Television, subclass 724 for modulating television signal.

- 370, Multiplex Communications, subclass 204 and 205 for plural diverse modulation techniques in a multiplex communication system.
- 375, Pulse or Digital Communications, subclasses 271 through 284, 302-308, and 322-337 for frequency or phase modulated carrier wave pulse or digital communications.
- 308 Sound carriers being frequency multiplexed between luminance carrier and chrominance carrier:**
This subclass is indented under subclass 307. Subject matter comprising means or steps for frequency multiplexing or merging sound carriers between luminance carrier and chrominance carrier signals.
- 309 Lowering frequency band of chrominance signal under frequency band of recorded brightness signal:**
This subclass is indented under subclass 307. Subject matter comprising means or steps for down-converting the frequency of the chrominance signal to a lower frequency than the luminance of the video signal before recording.
- 310 Phase shifting:**
This subclass is indented under subclass 307. Subject matter wherein the phase of the carrier frequency signal used to modulate at least one of the video color components is changed.
- 311 Amplitude modulation of luminance or chrominance:**
This subclass is indented under subclass 306. Subject matter comprising means or steps for amplitude modulating luminance or chrominance components of the color signal wherein the luminance and chrominance components occupy different frequency bands on a medium.
- SEE OR SEARCH CLASS:
332, Modulators, subclasses 149 through 182 for amplitude modulators, per se.
340, Communications: Electrical, subclass 825.7 for phase modulated responsive selective systems and subclasses 870.18-870.26 for frequency or phase or amplitude modulated telemetry systems.
- 348, Television, subclass 724 for modulating television signal.
- 370, Multiplex Communications, subclass 202 for amplitude modulation technique in a multiplex communication system.
- 375, Pulse or Digital Communications, subclasses 268 through 270, 301, 302, 320, and 321 for amplitude modulated carrier wave pulse or digital communications.
- 312 Phase modulation of luminance or chrominance:**
This subclass is indented under subclass 306. Subject matter comprising means or steps for phase modulating luminance or chrominance components of the color signal wherein the luminance and chrominance components occupy different frequency bands on a medium.
- SEE OR SEARCH CLASS:
332, Modulators, subclasses 144 through 148 for phase modulators, per se.
340, Communications: Electrical, subclass 825.7 for phase modulated responsive selective systems and subclasses 870.18-870.24 for frequency or phase or amplitude modulated telemetry systems.
- 348, Television, subclass 724 for modulating television signal.
- 370, Multiplex Communications, subclass 215 for phase modulation technique in a multiplex communication system.
- 375, Pulse or Digital Communications, subclasses 271 through 284, 302-308, and 322-337 for frequency or phase modulated carrier wave pulse or digital communications.
- 313 Using diffraction grating (e.g., strip filtering, etc.):**
This subclass is indented under subclass 300. This subclass is indented Subject matter comprising means or steps for utilizing a diffraction grating or a parallel or non-parallel line strip color filter for encoding color video signal onto a medium.

- SEE OR SEARCH CLASS:
348, Television, subclasses 273 through 283 and 285-293 for line strip color filters in combination with television cameras.
- 359, Optical: Systems and Elements, subclasses 566 through 576 for using diffraction grating in optical systems.
- 314 VIDEO TAPE RECORDING OR REPRODUCING (E.G., VCR, VTR, BETA, VHS, 8 MM (I.E., SEQUENTIAL R AND R), ETC.):**
This subclass is indented under the class definition. Subject matter comprising means or steps for recording or reproducing video signals on a tape medium.
- 315 Stationary head:**
This subclass is indented under subclass 314. Subject matter wherein the tape is drawn past a fixed head at a linear motion speed.
- SEE OR SEARCH CLASS:
360, Dynamic Magnetic Information Storage or Retrieval, appropriate subclasses for stationary magnetic head.
- 316 Helical scanning (i.e., rotating heads):**
This subclass is indented under subclass 314. Subject matter comprising means or steps for recording or reproducing video signals which are recorded in strips or segments along the tape by utilizing a tilted rotating head-drum.
- (1) Note. Helical scanning permits recording of higher bandwidth signals.
- (2) Note. In helical scanning, a rotating head is being utilized wherein the tape is wrapped around a circular drum at an angle.
- (3) Note. In helical scanning, a rotating head and diagonal tracks allow a slow-traveling tape to provide a fast transfer rate.
- SEE OR SEARCH CLASS:
369, Dynamic Information Storage or Retrieval, subclass 111 for storage or retrieval of information in spiral or helical tracks.
- 317 Heads with different azimuth:**
This subclass is indented under subclass 316. Subject matter wherein recording is performed by utilizing heads which are tilted with respect to the head-drum.
- (1) Note. In helical scanning, having heads at different azimuth angles would eliminate the need for guard bands.
- SEE OR SEARCH CLASS:
360, Dynamic Magnetic Information Storage or Retrieval, subclass 21 for head gap azimuth multiplex and subclass 76 for controlling the head azimuth.
- 318 With control track (e.g., VISS, VASS, audio, time code, etc.):**
This subclass is indented under subclass 316. Subject matter comprising means or steps for recording control track information along a linear or continuous track along the tape medium adjacent to the helical scans or stripping patterns.
- (1) Note. Examples of control track information are VHS index search system (i.e., VISS), VHS address search system (i.e., VASS), audio, or time-code.
- 319 Guard band:**
This subclass is indented under subclass 316. Subject matter comprising means or steps for establishing bands which are unrecorded areas or spaces between the helical scanning or strips for providing isolation there between.
- SEE OR SEARCH CLASS:
360, Dynamic Magnetic Information Storage or Retrieval, subclass 264.6 and 267 for using guard band in a magnetic head.
- 320 With servo control:**
This subclass is indented under subclass 316. Subject matter comprising means or steps for generating control signals to a servo mechanism for controlling recording head position with respect to the tape medium.

- SEE OR SEARCH CLASS:
360, Dynamic Magnetic Information Storage or Retrieval, appropriate subclasses for servo control of a magnetic head.
369, Dynamic Information Storage or Retrieval, subclasses 43 through 44.42 for servo control of an optical head.
- 321 With Hi-Fi audio (e.g., surround, 5.X, etc.):**
This subclass is indented under subclass 314. Subject matter comprising means or steps for recording or reproducing video with wide-spectrum audio signals.
- (1) Note. Wide-spectrum audio signals include, for example, stereo, surround sound or 5.1 surround sound signal.
(2) Note. The wide-spectrum audio signal herein is tape-based or sequential access-type medium.
- SEE OR SEARCH THIS CLASS, SUBCLASS:
339, for advance audio recording or reproducing non-specific to tape medium.
- SEE OR SEARCH CLASS:
381, Electrical Audio Signal Processing Systems and Devices, appropriate subclasses for surround sound signal processing.
- 322 Time lapse tape recording (e.g., intermittent recording, etc.):**
This subclass is indented under subclass 314. Subject matter comprising means or steps for recording intermittently on a taped-based medium for purpose of extending recording time.
- SEE OR SEARCH THIS CLASS, SUBCLASS:
226, for time lapse recording in conjunction with an interface circuitry.
- 323 Digital tape recording or reproducing:**
This subclass is indented under subclass 314. Subject matter comprising means or steps for recording or reproducing digital video signals on a tape medium.
- 324 With multiple streams:**
This subclass is indented under subclass 323. Subject matter comprising means or steps for recording or reproducing multiple audio or video signals on a tape-based medium.
- 325 Pause mode:**
This subclass is indented under subclass 323. Subject matter comprising means or steps for rendering one or more particular frame repeatedly.
- SEE OR SEARCH THIS CLASS, SUBCLASS:
349, for trick play pause processing.
- SEE OR SEARCH CLASS:
369, Dynamic Information Storage or Retrieval, subclass 47.11 and 47.42 for pause mode signal generation/control.
- 326 VIDEO PROCESSING FOR RECORDING:**
This subclass is indented under the class definition. Subject matter comprising means or steps for processing a received video signal to record the video signal on a medium.
- 327 With A/D or D/A converter:**
This subclass is indented under subclass 326. Subject matter comprising means or steps for converting an analog video signal into a digital video signal or for converting a digital video signal into an analog video signal.
- SEE OR SEARCH CLASS:
360, Dynamic Magnetic Information Storage or Retrieval, subclass 32 for similar subject matter in dynamic magnetic information storage or retrieval; and subclasses 39-54 for general processing of a digital signal in dynamic magnetic information storage or retrieval.
- 328 With compression (e.g., DCT/MJPEG, etc.):**
This subclass is indented under subclass 326. Subject matter comprising means or steps for reducing the quantity of video data to minimize storage or transmission requirements.

SEE OR SEARCH CLASS:

- 341, Coded Data Generation or Conversion, appropriate subclasses for code converters which may include bandwidth reduction.
- 348, Television, subclasses 384.1 through 440.1 for bandwidth reduction in an analog television system.
- 370, Multiplex Communications, subclass 7 for multiplex systems with amplitude compression of incoming signal and corresponding expansion, subclass 109 for time compression or expansion in time division multiplexing, and subclass 118 for bandwidth conservation techniques.
- 375, Pulse or Digital Communications, subclasses 240.01 through 240.29 for digital television bandwidth compression system.
- 381, Electrical Audio Signal Processing Systems and Devices, subclasses 29 through 35 for bandwidth or time compression or expansion of audio signals.
- 382, Image Analysis, subclasses 232 through 253 for image compression or coding.
- 704, Data Processing: Speech Signal Processing, Linguistics, Language Translation, and Audio Compression/Decompression, subclasses 500 through 502 for audio signal bandwidth compression or expansion.

329 MPEG1 or MPEG2 (e.g., GOP/GOF (I, P, and B frames), etc.):

This subclass is indented under subclass 328. Subject matter wherein the compression is performed on a frame-by-frame basis and/or by processing or coding the difference between two successive frames.

- (1) Note. Compression on a frame-by-frame basis is a spatial coding technique for generating I-frames/pictures or intra frames (e.g., I, P, B frames, etc.).
- (2) Note. Compression on the difference between two successive frames is a temporal encoding technique for generating predictive and bidirectional frames (i.e., P or B).

SEE OR SEARCH CLASS:

- 375, Pulse or Digital Communications, subclass 240 and 241 for bandwidth reduction or expansion of television video signal.
- 382, Image Analysis, subclass 236 for image coding using inter-frame coding.

330 MPEG2 transport stream (e.g., 188-packets or data structure, etc.):

This subclass is indented under subclass 329. Subject matter comprising means or steps for formatting data structure of a video signal into 188-packet groups data structure.

- (1) Note. The 188-packet group data structure is advantageous in error prone environment.

331 With MPEG4 or MPEG7 (e.g., place META data, VOP, etc.):

This subclass is indented under subclass 328. Subject matter comprising means or steps for compression encoding of a video signal into object planes.

- (1) Note. An object plane is a separate and independent stream of video data representation, for example, a character object or a background object.
- (2) Note. MPEG4 is the representation of audio and visual data in terms of objects.

332 DVD with MPEG2 program stream (i.e., VOB):

This subclass is indented under subclass 326. Subject matter comprising means or steps for encapsulating an MPEG2 program stream into a DVD data structure.

- (1) Note. The DVD data structure formats includes a video object (i.e., VOB) having cell, video object unit (i.e., VOBU) and MPEG2 (GOP/GOF) data structure.

333 With still picture:

This subclass is indented under subclass 332. Subject matter comprising means or steps for incorporating a still image into the DVD data structure.

334 DVD with MPEG2 transport stream:

This subclass is indented under subclass 326. Subject matter comprising means or steps for encapsulating an MPEG2 transport stream into a DVD data structure.

335 High definition video:

This subclass is indented under subclass 326. Subject matter comprising means or steps for recording a video signal having more than 512 scanning lines.

(1) Note. Standard definition includes, for example, NTSC or PAL.

(2) Note. The high definition video herein could be recorded on a DVD or on a tape, i.e., non-medium specific.

336 DVD with high definition video (e.g., holographic, etc.):

This subclass is indented under subclass 335. Subject matter comprising means or steps for encapsulating high definition video signals into a high density DVD data structure.

(1) Note. The high definition video DVD utilizes a blue laser for recording and reproducing wherein the wavelength of a blue laser is half of a red laser, thereby increasing the storage space by four-fold.

(2) Note. Holographic processing involves a three-dimensional representation of a data, thereby reducing data structure.

(3) Note. A high definition video signal has more scanning lines than a standard video definition signal such as NTSC (i.e., 700-1200 scanning lines versus 512 scanning lines).

SEE OR SEARCH CLASS:

369, Dynamic Information Storage or Retrieval, subclass 103 for holographic data storage or retrieval.

337 Multiplexing video and second signal:

This subclass is indented under subclass 326. Subject matter comprising means or steps for multiplexing or merging an additional signal to the video signal for recording.

(1) Note. The second signal, for example, may be a secondary video signal, timing signal, graphic or picture information data, or message data.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

235, through 238, for simultaneously recording of a plurality of television signals.

308, for frequency multiplexing a sound signal with a modulated color television signal.

SEE OR SEARCH CLASS:

348, Television, subclasses 473 through 486 for television signal including additional information.

338 With mono or stereo audio signal:

This subclass is indented under subclass 337. Subject matter wherein the additional signal is a mono or stereo audio signal.

339 With advance audio (e.g., surround or 5.1, etc.):

This subclass is indented under subclass 337. Subject matter wherein the additional signal is a high quality surround audio signal.

(1) Note. The surround signal includes, for example, 5.1 or more audio channels.

(2) Note. The advance audio signal herein includes random access- type medium.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

321, for advance audio signal recording or reproduction for sequential access - type medium (i.e., tape-based medium).

SEE OR SEARCH CLASS:

381, Electrical Audio Signal Processing Systems and Devices, appropriate subclasses for surround sound signal processing.

340 Bilingual audio (e.g., SAP, etc.):

This subclass is indented under subclass 337. Subject matter wherein the additional signal is an audio signal in a different language that

is either selectively or additionally recorded with another audio signal.

- 341 Simultaneous recording of plural video signals (e.g., multi-angle/scene recording, etc.):** This subclass is indented under subclass 326. Subject matter comprising means or steps for recording two or more video signals at the same time.

SEE OR SEARCH THIS CLASS, SUBCLASS:

223, for interface circuitry for recording simultaneously a plurality of multiplexed video signals.

235, through 238, for systems adapted to perform simultaneous recording and reproducing operations.

337, for multiplexing a video signal with another signal.

- 342 Light or beam (e.g., EBR, etc.):** This subclass is indented under subclass 326. Subject matter comprising means or steps for recording a video signal on a medium by utilizing a stream of electron beams generated by a CRT or light.

(1) Note. Included herein are, for example, electron beam recorder for high quality video tape-to-film conversion or transfer using an electron scanning beam to sequentially expose a single film strip.

SEE OR SEARCH CLASS:

369, Dynamic Information Storage and Retrieval, subclasses 121 through 123 for utilizing a particular light source such as a CRT beam or laser for dynamic storage or retrieval of information.

- 343 LOCAL TRICK PLAY PROCESSING:** This subclass is indented under the class definition. Subject matter comprising means or steps for reproducing a video from a medium at speeds other than normal playback speed.

(1) Note. The other-than-normal playback speed includes, for example, fast forward play, fast reverse play, pause, and slow play.

(2) Note. This subclass is directed for trick play processing at a user's device (i.e., local device). Trick play processing for use in an interactive distribution system (e.g., headend or server, etc.) are classified elsewhere. See the SEE OR SEARCH CLASS notes below.

SEE OR SEARCH CLASS:

725, Interactive Video Distribution Systems, subclass 88 and 102 for trick play processing in a video-on-demand and near video-on-demand systems respectively.

- 344 With randomly accessible medium (e.g., hard disk, disc, DVD, RAM, etc.):** This subclass is indented under subclass 343. Subject matter wherein the trick play is performed by utilizing a non-sequentially accessible medium.

(1) Note. Randomly accessible medium includes, for example, hard disk, DVD, RAM, or disc.

- 345 Fast forward MPEG using I and any combination of P or B frame:** This subclass is indented under subclass 344. Subject matter comprising means or steps for fast forward playback of an MPEG-encoded video signal from a medium by utilizing I and any combination of P and/or B type frames.

(1) Note. I-frame stands for intra-frame encoded video signal, P-frame stands for predictive encoded video signal, and B-frame stands for bidirectional predictive encoded frame.

- 346 MPEG I frame-only mode:** This subclass is indented under subclass 345. Subject matter wherein the trick playback utilizes only MPEG encoded video I-type frame.

- 347 Fast reverse MPEG using I and any combination of P or B frames:** This subclass is indented under subclass 344. Subject matter comprising means or steps for fast reverse playback of an MPEG encoded video signal from a medium by utilizing I and any combination of P- and/or B- type frames.

- (1) Note. Multiple memories are normally used for storing decoded video frames in order to facilitate fast reverse playback.
- 348 MPEG I frame-only mode:**
This subclass is indented under subclass 347. Subject matter wherein the trick playback utilizes only MPEG I-type frame encoded video.
- 349 Pause:**
This subclass is indented under subclass 344. Subject matter comprising means or steps for rendering one or more particular frames repeatedly.
- (1) Note. For example, repeating an I frame more than once constitutes a pause mode.
- SEE OR SEARCH CLASS:
369, Dynamic Information Storage or Retrieval, subclasses 47.11 and 47.42 for pause mode signal generation/control.
- 350 Trick play transition:**
This subclass is indented under subclass 344. Subject matter comprising means or steps for changing a playback mode to another playback mode.
- (1) Note. The playback mode herein includes normal and trick modes of playback operation.
- 351 With trick play table (e.g., time code, sector number, LUT, address, etc.):**
This subclass is indented under subclass 344. Subject matter comprising means or steps for utilizing a list of trick play information for searching particular frames to perform trick play operation.
- (1) Note. The table herein refers to a look-up table for pointing to an address, time code, or sector number associated with a frame.
- 352 Trick for analog laser disk/disc:**
This subclass is indented under subclass 343. Subject matter comprising means or steps for performing trick play operations from information read from an analog laser disk/disc medium.
- 353 VIDEO PROCESSING FOR REPRODUCING (E.G., DECODING, ETC.):**
This subclass is indented under the class definition. Subject matter comprising means or steps for converting retrieved information from a storage medium into a sequence of motion video images.
- (1) Note. Subject matter in this subclass includes decompression or decoding of a video signal during reproduction processing.
- SEE OR SEARCH CLASS:
341, Coded Data Generation or Conversion, appropriate subclasses for data encoding or decoding in general.
382, Image Analysis, subclass 233 for details of image decompression or decoding in an image analysis system.
- 354 Parallel decompression or decoding:**
This subclass is indented under subclass 353. Subject matter comprising means or steps for simultaneously decompressing or decoding plural compressed video signals to restore back to their original forms.
- 355 Digital decompression or decoding (e.g., DCT or MJPEG, etc.):**
This subclass is indented under subclass 353. Subject matter comprising means or steps for digital decompressing or decoding of a compressed video signal so as to restore back to the original form of the video signal.
- SEE OR SEARCH CLASS:
382, Image Analysis, subclass 233 for image decompression in an image analysis system.
- 356 MPEG decompression or decoding (e.g., MPEG1, MPEG2, inter-frame, etc.):**
This subclass is indented under subclass 353. Subject matter comprising means or steps for decompression of an MPEG-encoded video signal so as to restore back to the original video signal.

357 De-multiplexing:
This subclass is indented under subclass 353. Subject matter comprising means or steps for separating different components of a reproduced signal into different channels.

- (1) Note. The components herein include, for example, at least one video and another video or audio signal.
- (2) Note. Channels herein refer to different signal paths.

358 HOUSING:
This subclass is indented under the class definition. Subject matter comprising enclosure or housing details for a video recording and/or reproducing device.

SEE OR SEARCH CLASS:

- 312, Supports: Cabinet Structure, subclass 7.2 for TV cabinet, per se.
- 348, Television, subclasses 836 through 843 for television housing support structure; subclasses 787 and 789 for projection- type image reproducer cabinet or chassis; and subclass 794 for cabinet or chassis of a liquid crystal image reproducer.
- 360, Dynamic Magnetic Information Storage or Retrieval, subclass 129 for a magnetic head housing.
- 361, Electricity: Electrical Systems and Devices, subclasses 600 through 837 for generic electrical component housing.
- 455, Telecommunications, subclasses 347 through 351 for radio cabinet, housing, or chassis.
- 720, Dynamic Optical Information Storage or Retrieval, subclasses 600 through 657 for a particular cabinet structure for optical media.

359 For combined TV and video recording/reproducing:
This subclass is indented under subclass 358. Subject matter wherein the housing is capable of providing a combined enclosure for a TV and a video recording/reproducing device.

360 Single housing for plural deck devices or systems (e.g., VCR and VCR, VCR and DVD/hard drive, etc.):

This subclass is indented under subclass 358. Subject matter wherein the housing is a unitary or single housing capable of providing an enclosure for plural decks devices.

361 For DVD or CD:

This subclass is indented under subclass 358. Subject matter wherein the housing is adapted for enclosing a DVD or CD video recording or reproducing device.

362 For portable video device:

This subclass is indented under subclass 358. Subject matter wherein the housing for the video recording or reproducing device is such that it could be carried by a user.

E-SUBCLASSES

The E-subclasses in U.S. Class 386 provide for processes and apparatus specially adapted for treating a television signal for dynamic storage or retrieval.

E5.001 TELEVISION SIGNAL RECORDING (EPO):

This subclass provides for subject matter comprising processes and apparatus for the dynamic storage or retrieval of a television signal. This subclass is substantially the same in scope as ECLA classification H04N5/76.

E5.002 Interface circuits between an apparatus for recording and another apparatus (EPO):

This subclass is indented under subclass E5.001. This subclass is substantially the same in scope as ECLA classification H04N5/765.

E5.003 Television signal processing therefor (EPO):

This subclass is indented under subclass E5.001. This subclass is substantially the same in scope as ECLA classification H04N5/91.

E5.004 For scrambling; for copy protection (EPO):

This subclass is indented under subclass E5.003. This subclass is substantially the same in scope as ECLA classification H04N5/913.

E5.005 For field- or frame-skip recording or reproducing (EPO):

This subclass is indented under subclass E5.003. This subclass is substantially the same in scope as ECLA classification H04N5/915.

E5.006 With sound multiplexing (EPO):

This subclass is indented under subclass E5.005. This subclass is substantially the same in scope as ECLA classification H04N5/915S.

E5.007 For bandwidth reduction (EPO):

This subclass is indented under subclass E5.003. This subclass is substantially the same in scope as ECLA classification H04N5/917.

E5.008 By dividing samples or signal segments (e.g., television lines, etc.) among a plurality of recording channels (EPO):

This subclass is indented under subclass E5.007. This subclass is substantially the same in scope as ECLA classification H04N5/919.

E5.009 Transformation of the television signal for recording (e.g., modulation, frequency changing, etc.); inverse transformation for playback (EPO):

This subclass is indented under subclass E5.003. This subclass is substantially the same in scope as ECLA classification H04N5/92.

E5.01 By recording or reproducing the baseband signal (EPO):

This subclass is indented under subclass E5.009. This subclass is substantially the same in scope as ECLA classification H04N5/921.

E5.011 Using pre-emphasis of the signal before modulation and de-emphasis of the signal after demodulation (EPO):

This subclass is indented under subclass E5.009. This subclass is substantially the same in scope as ECLA classification H04N5/923.

E5.012 By pulse code modulation (EPO):

This subclass is indented under subclass E5.009. This subclass is substantially the same in scope as ECLA classification H04N5/926.

E5.013 Involving data reduction (EPO):

This subclass is indented under subclass E5.012. This subclass is substantially the same in scope as ECLA classification H04N5/926B.

E5.014 Using predictive coding (EPO):

This subclass is indented under subclass E5.013. This subclass is substantially the same in scope as ECLA classification H04N5/926B2.

E5.015 Using transform coding (EPO):

This subclass is indented under subclass E5.013. This subclass is substantially the same in scope as ECLA classification H04N5/926B3.

E5.016 With processing of the sound signal (EPO):

This subclass is indented under subclass E5.012. This subclass is substantially the same in scope as ECLA classification H04N5/926S.

E5.017 Using time division multiplex of the PCM audio and PCM video signals (EPO):

This subclass is indented under subclass E5.016. This subclass is substantially the same in scope as ECLA classification H04N5/926S2.

E5.018 With insertion of the PCM audio signals in the vertical blanking interval of the PCM video signal (EPO):

This subclass is indented under subclass E5.017. This subclass is substantially the same in scope as ECLA classification H04N5/926S2B.

E5.019 The sound signal being pulse code modulated and recorded in time division multiplex with the modulated video signal (EPO):

This subclass is indented under subclass E5.009. This subclass is substantially the same in scope as ECLA classification H04N5/928.

E5.02 Involving the multiplexing of an additional signal and the video signal (EPO):

This subclass is indented under subclass E5.009. This subclass is substantially the same in scope as ECLA classification H04N5/92N.

E5.021 The additional signal being a sound signal (EPO):

This subclass is indented under subclass E5.02. This subclass is substantially the same in scope as ECLA classification H04N5/92N2.

E5.022 Using time division multiplex (EPO):

This subclass is indented under subclass E5.021. This subclass is substantially the same in scope as ECLA classification H04N5/92N2B.

E5.023 Using frequency division multiplex (EPO):

This subclass is indented under subclass E5.021. This subclass is substantially the same in scope as ECLA classification H04N5/92N2D.

E5.024 The additional signal being at least another television signal (EPO):

This subclass is indented under subclass E5.02. This subclass is substantially the same in scope as ECLA classification H04N5/92N4.

E5.025 The additional signal being a character code signal (EPO):

This subclass is indented under subclass E5.02. This subclass is substantially the same in scope as ECLA classification H04N5/92N6.

E5.026 For teletext (EPO):

This subclass is indented under subclass E5.025. This subclass is substantially the same in scope as ECLA classification H04N5/92N6B.

E5.027 Involving the use of subcodes (EPO):

This subclass is indented under subclass E5.025. This subclass is substantially the same in scope as ECLA classification H04N5/92N6D.

E5.028 Regeneration of the television signal or of selected parts thereof (EPO):

This subclass is indented under subclass E5.003. This subclass is substantially the same in scope as ECLA classification H04N5/93.

E5.029 For restoring the level of the reproduced signal (EPO):

This subclass is indented under subclass E5.028. This subclass is substantially the same in scope as ECLA classification H04N5/931.

E5.03 The level control being frequency dependent (EPO):

This subclass is indented under subclass E5.029. This subclass is substantially the same in scope as ECLA classification H04N5/931F.

E5.031 Regeneration of analogue synchronization signals (EPO):

This subclass is indented under subclass E5.028. This subclass is substantially the same in scope as ECLA classification H04N5/932.

E5.032 Regeneration of digital synchronization signals (EPO):

This subclass is indented under subclass E5.028. This subclass is substantially the same in scope as ECLA classification H04N5/935.

E5.033 By assembling picture element blocks in an intermediate store (EPO):

This subclass is indented under subclass E5.028. This subclass is substantially the same in scope as ECLA classification H04N5/937.

E5.034 Involving the mixing of the reproduced video signal with a non-recorded signal (e.g., a text signal, etc.) (EPO):

This subclass is indented under subclass E5.028. This subclass is substantially the same in scope as ECLA classification H04N5/93M.

E5.035 Signal drop-out compensation (EPO):

This subclass is indented under subclass E5.028. This subclass is substantially the same in scope as ECLA classification H04N5/94.

E5.036 For signals recorded by pulse code modulation (EPO):

This subclass is indented under subclass E5.035. This subclass is substantially the same in scope as ECLA classification H04N5/945.

E5.037 Time-base error compensation (EPO):

This subclass is indented under subclass E5.028. This subclass is substantially the same in scope as ECLA classification H04N5/95.

E5.038 By using an analogue memory (e.g., a CCD shift register, etc.) the delay of which is controlled by a voltage controlled oscillator (EPO):

This subclass is indented under subclass E5.037. This subclass is substantially the same in scope as ECLA classification H04N5/953.

E5.039 By using a digital memory with independent write-in and read-out clock generators (EPO):

This subclass is indented under subclass E5.037. This subclass is substantially the same in scope as ECLA classification H04N5/956.

E5.04 For the suppression of noise (EPO):

This subclass is indented under subclass E5.003. This subclass is substantially the same in scope as ECLA classification H04N5/911.

E5.041 Using magnetic recording (EPO):

This subclass is indented under subclass E5.001. This subclass is substantially the same in scope as ECLA classification H04N5/78.

E5.042 On discs or drums (EPO):

This subclass is indented under subclass E5.041. This subclass is substantially the same in scope as ECLA classification H04N5/781.

E5.043 On tape (EPO):

This subclass is indented under subclass E5.041. This subclass is substantially the same in scope as ECLA classification H04N5/782.

E5.044 With stationary magnetic heads (EPO):

This subclass is indented under subclass E5.043. This subclass is substantially the same in scope as ECLA classification H04N5/7822.

E5.045 With rotating magnetic heads (EPO):

This subclass is indented under subclass E5.043. This subclass is substantially the same in scope as ECLA classification H04N5/7824.

E5.046 Involving helical scanning of the magnetic tape (EPO):

This subclass is indented under subclass E5.045. This subclass is substantially the same in scope as ECLA classification H04N5/7826.

E5.047 For recording on tracks inclined relative to the direction of movement of the tape (EPO):

This subclass is indented under subclass E5.046. This subclass is substantially the same in scope as ECLA classification H04N5/7826B.

E5.048 Using more than one track for the recording of one television field or frame (i.e., segmented recording) (EPO):

This subclass is indented under subclass E5.047. This subclass is substantially the same in scope as ECLA classification H04N5/7826B2.

E5.049 Involving transversal scanning of the magnetic tape (EPO):

This subclass is indented under subclass E5.045. This subclass is substantially the same in scope as ECLA classification H04N5/7828.

E5.05 Recording using a special track configuration (e.g., crossing, overlapping, etc.) (EPO):

This subclass is indented under subclass E5.043. This subclass is substantially the same in scope as ECLA classification H04N5/782B.

E5.051 Involving recording in different depths of the magnetic tape (EPO):

This subclass is indented under subclass E5.043. This subclass is substantially the same in scope as ECLA classification H04N5/782D.

E5.052 Adaptations for reproducing at a rate different from the recording rate (EPO):

This subclass is indented under subclass E5.043. This subclass is substantially the same in scope as ECLA classification H04N5/783.

E5.053 On a sheet (EPO):

This subclass is indented under subclass E5.041. This subclass is substantially the same in scope as ECLA classification H04N5/784.

E5.054 Recording or playback not using inductive heads (e.g., magneto-optical, thermomagnetic, magnetostrictive, galvanomagnetic, etc.) (EPO):

This subclass is indented under subclass E5.041. This subclass is substantially the same in scope as ECLA classification H04N5/78C.

SEE OR SEARCH THIS CLASS, SUBCLASS:

E5.055, for electrostatic recording.

E5.061, for photographic recording.

E5.055 Using electrostatic recording (EPO):

This subclass is indented under subclass E5.001. This subclass is substantially the same in scope as ECLA classification H04N5/80.

E5.056 On discs or drums (EPO):

This subclass is indented under subclass E5.055. This subclass is substantially the same in scope as ECLA classification H04N5/80B.

E5.057 Using deformable thermoplastic recording medium (EPO):

This subclass is indented under subclass E5.055. This subclass is substantially the same in scope as ECLA classification H04N5/82.

E5.058 On discs or drums (EPO):

This subclass is indented under subclass E5.057. This subclass is substantially the same in scope as ECLA classification H04N5/83.

E5.059 Using holographic recording (EPO):

This subclass is indented under subclass E5.001. This subclass is substantially the same in scope as ECLA classification H04N5/89.

E5.06 On discs or drums (EPO):

This subclass is indented under subclass E5.059. This subclass is substantially the same in scope as ECLA classification H04N5/90.

E5.061 Using optical recording (EPO):

This subclass is indented under subclass E5.001. This subclass is substantially the same in scope as ECLA classification H04N5/84.

E5.062 On film (EPO):

This subclass is indented under subclass E5.061. This subclass is substantially the same in scope as ECLA classification H04N5/84F.

E5.063 The film moving intermittently (EPO):

This subclass is indented under subclass E5.062. This subclass is substantially the same in scope as ECLA classification H04N5/84F2.

E5.064 On discs or drums (EPO):

This subclass is indented under subclass E5.061. This subclass is substantially the same in scope as ECLA classification H04N5/85.

E5.065 Producing a motion picture film from a television signal (EPO):

This subclass is indented under subclass E5.061. This subclass is substantially the same in scope as ECLA classification H04N5/87.

E5.066 Using variable electrical capacitive recording (EPO):

This subclass is indented under subclass E5.001. This subclass is substantially the same in scope as ECLA classification H04N5/903.

E5.067 Using static stores (e.g., storage tubes, semiconductor memories, etc.) (EPO):

This subclass is indented under subclass E5.001. This subclass is substantially the same in scope as ECLA classification H04N5/907.

E5.068 On discs or drums (EPO):

This subclass is indented under subclass E5.001. This subclass is substantially the same in scope as ECLA classification H04N5/76B.

E5.069 Between a recording apparatus and a television camera (EPO):

This subclass is indented under subclass E5.068. This subclass is substantially the same in scope as ECLA classification H04N5/77.

E5.07 Between a recording apparatus and a television receiver (EPO):

This subclass is indented under subclass E5.068. This subclass is substantially the same in scope as ECLA classification H04N5/775.

E5.071 The recorder being connected to, or coupled with, the antenna of the television receiver (EPO):

This subclass is indented under subclass E5.07. This subclass is substantially the same in scope as ECLA classification H04N5/775B.

E5.072 The recording apparatus and the television camera being placed in the same enclosure (EPO):

This subclass is indented under subclass E5.07. This subclass is substantially the same in scope as ECLA classification H04N5/77B.

E9.001 PROCESSING OF COLOR TELEVISION SIGNALS IN CONNECTION WITH RECORDING (EPO):

This subclass provides for processes and apparatus having specific utility for treating a television signal having a chrominance component for dynamic storage or retrieval. This subclass is substantially the same in scope as ECLA classification H04N9/79.

E9.002 For controlling the level of the chrominance signal (e.g., by means of automatic chroma control circuits, etc.) (EPO):

This subclass is indented under subclass E9.001. This subclass is substantially the same in scope as ECLA classification H04N9/793.

E9.003 The level control being frequency-dependent (EPO):

This subclass is indented under subclass E9.002. This subclass is substantially the same in scope as ECLA classification H04N9/793F.

E9.004 By using a pre-emphasis network at the recording side and a de-emphasis network at the reproducing side (EPO):

This subclass is indented under subclass E9.003. This subclass is substantially the same in scope as ECLA classification H04N9/793F2.

E9.005 Using intermediate digital signal processing (EPO):

This subclass is indented under subclass E9.001. This subclass is substantially the same in scope as ECLA classification H04N9/79D.

E9.006 Suppression of interfering signals at the reproducing side (e.g., noise, etc.) (EPO):

This subclass is indented under subclass E9.001. This subclass is substantially the same in scope as ECLA classification H04N9/79E.

E9.007 The interfering signals being intermodulation signals (EPO):

This subclass is indented under subclass E9.006. This subclass is substantially the same in scope as ECLA classification H04N9/79E2.

E9.008 The interfering signals being cross-talk signals (EPO):

This subclass is indented under subclass E9.006. This subclass is substantially the same in scope as ECLA classification H04N9/79E4.

E9.009 For more than one processing mode (EPO):

This subclass is indented under subclass E9.001. This subclass is substantially the same in scope as ECLA classification H04N9/79M.

E9.01 For more than one standard (EPO):

This subclass is indented under subclass E9.009. This subclass is substantially the same in scope as ECLA classification H04N9/79M2.

E9.011 Transformation of the television signal for recording (e.g., modulation, frequency changing, etc.); inverse transformation for playback (EPO):

This subclass is indented under subclass E9.001. This subclass is substantially the same in scope as ECLA classification H04N9/80.

E9.012 Involving pulse code modulation of the color picture signal components (EPO):

This subclass is indented under subclass E9.011. This subclass is substantially the same in scope as ECLA classification H04N9/804.

E9.013 Involving data reduction (EPO):

This subclass is indented under subclass E9.012. This subclass is substantially the same in scope as ECLA classification H04N9/804B.

E9.014 Using predictive coding (EPO):

This subclass is indented under subclass E9.013. This subclass is substantially the same in scope as ECLA classification H04N9/804B2.

E9.015 Using transform coding (EPO):

This subclass is indented under subclass E9.013. This subclass is substantially the same in scope as ECLA classification H04N9/804B3.

E9.016 With processing of the sound signal (EPO):

This subclass is indented under subclass E9.012. This subclass is substantially the same in scope as ECLA classification H04N9/806.

- E9.017 Using time division multiplex of the PCM audio and PCM video signals (EPO):**
This subclass is indented under subclass E9.016. This subclass is substantially the same in scope as ECLA classification H04N9/806S.
- E9.018 With insertion of the PCM audio signals in the vertical blanking interval of the PCM video signal (EPO):**
This subclass is indented under subclass E9.017. This subclass is substantially the same in scope as ECLA classification H04N9/806S2.
- E9.019 Involving pulse code modulation of the composite color video-signal (EPO):**
This subclass is indented under subclass E9.011. This subclass is substantially the same in scope as ECLA classification H04N9/808.
- E9.02 Involving data reduction (EPO):**
This subclass is indented under subclass E9.019. This subclass is substantially the same in scope as ECLA classification H04N9/808B.
- E9.021 Using predictive coding (EPO):**
This subclass is indented under subclass E9.02. This subclass is substantially the same in scope as ECLA classification H04N9/808B2.
- E9.022 With processing of the sound signal (EPO):**
This subclass is indented under subclass E9.019. This subclass is substantially the same in scope as ECLA classification H04N9/808S.
- E9.023 Using time division multiplex of the PCM audio and PCM video signals (EPO):**
This subclass is indented under subclass E9.022. This subclass is substantially the same in scope as ECLA classification H04N9/808S2.
- E9.024 With insertion of the PCM audio signals in the vertical blanking interval of the PCM video signal (EPO):**
This subclass is indented under subclass E9.023. This subclass is substantially the same in scope as ECLA classification H04N9/808S2B.
- E9.025 The individual color picture signal components being recorded sequentially only (EPO):**
This subclass is indented under subclass E9.011. This subclass is substantially the same in scope as ECLA classification H04N9/81.
- E9.026 The individual color picture signal components being recorded simultaneously only (EPO):**
This subclass is indented under subclass E9.011. This subclass is substantially the same in scope as ECLA classification H04N9/82.
- E9.027 The luminance and chrominance signals being recorded in separate channels (EPO):**
This subclass is indented under subclass E9.026. This subclass is substantially the same in scope as ECLA classification H04N9/825.
- E9.028 With sound processing (EPO):**
This subclass is indented under subclass E9.027. This subclass is substantially the same in scope as ECLA classification H04N9/825S.
- E9.029 The recorded chrominance signal occupying a frequency band under the frequency band of the recorded brightness signal (EPO):**
This subclass is indented under subclass E9.026. This subclass is substantially the same in scope as ECLA classification H04N9/83.
- E9.03 Involving processing of the sound signal (EPO):**
This subclass is indented under subclass E9.029. This subclass is substantially the same in scope as ECLA classification H04N9/835.
- E9.031 The sound carriers being frequency multiplexed between the luminance carrier and the chrominance carrier (EPO):**
This subclass is indented under subclass E9.03. This subclass is substantially the same in scope as ECLA classification H04N9/835M.
- E9.032 Using intermediate digital signal processing (EPO):**
This subclass is indented under subclass E9.029. This subclass is substantially the same in scope as ECLA classification H04N9/83D.

- E9.033 Using an increased bandwidth for the luminance or the chrominance signal (EPO):**
This subclass is indented under subclass E9.029. This subclass is substantially the same in scope as ECLA classification H04N9/83H.
- E9.034 With selection of the conventional or the increased bandwidth signal (e.g., VHS or SVHS signal selection, etc.) (EPO):**
This subclass is indented under subclass E9.033. This subclass is substantially the same in scope as ECLA classification H04N9/83H2.
- E9.035 The recorded signal showing a feature, which is different in adjacent track parts (e.g., different phase or frequency, etc.) (EPO):**
This subclass is indented under subclass E9.029. This subclass is substantially the same in scope as ECLA classification H04N9/84.
- E9.036 Involving the multiplexing of an additional signal and the color video signal (EPO):**
This subclass is indented under subclass E9.026. This subclass is substantially the same in scope as ECLA classification H04N9/82N.
- E9.037 The additional signal being a sound signal (EPO):**
This subclass is indented under subclass E9.036. This subclass is substantially the same in scope as ECLA classification H04N9/82N2.
- E9.038 Using time division multiplex (EPO):**
This subclass is indented under subclass E9.037. This subclass is substantially the same in scope as ECLA classification H04N9/82N2B.
- E9.039 Using frequency division multiplex (EPO):**
This subclass is indented under subclass E9.037. This subclass is substantially the same in scope as ECLA classification H04N9/82N2D.
- E9.04 The additional signal being at least another television signal (EPO):**
This subclass is indented under subclass E9.036. This subclass is substantially the same in scope as ECLA classification H04N9/82N4.
- E9.041 The additional signal being a character code signal (EPO):**
This subclass is indented under subclass E9.036. This subclass is substantially the same in scope as ECLA classification H04N9/82N6.
- E9.042 For teletext:**
This subclass is indented under subclass E9.041. This subclass is substantially the same in scope as ECLA classification H04N9/82N6B.
- E9.043 Involving the use of subcodes (EPO):**
This subclass is indented under subclass E9.041. This subclass is substantially the same in scope as ECLA classification H04N9/82N6D.
- E9.044 The recorded brightness signal occupying a frequency band totally overlapping the frequency band of the recorded chrominance signal (e.g., frequency interleaving, etc.) (EPO):**
This subclass is indented under subclass E9.026. This subclass is substantially the same in scope as ECLA classification H04N9/85.
- E9.045 Involving processing of the sound signal (EPO):**
This subclass is indented under subclass E9.011. This subclass is substantially the same in scope as ECLA classification H04N9/802.
- E9.046 The individual color picture signal components being recorded sequentially and simultaneously (e.g., corresponding to SECAM-system, etc.) (EPO):**
This subclass is indented under subclass E9.011. This subclass is substantially the same in scope as ECLA classification H04N9/86.
- E9.047 For recording the signal in a plurality of channels, the bandwidth of each channel being less than the bandwidth of the signal (EPO):**
This subclass is indented under subclass E9.001. This subclass is substantially the same in scope as ECLA classification H04N9/797.
- E9.048 By dividing the luminance or color component signal samples or frequency bands**

- among a plurality of recording channels (EPO):**
This subclass is indented under subclass E9.047. This subclass is substantially the same in scope as ECLA classification H04N9/797D.
- E9.049 By spectrum folding of the high frequency components of the luminance signal (EPO):**
This subclass is indented under subclass E9.047. This subclass is substantially the same in scope as ECLA classification H04N9/797F.
- E9.05 Regeneration of color television signals (EPO):**
This subclass is indented under subclass E9.001. This subclass is substantially the same in scope as ECLA classification H04N9/87.
- E9.051 For restoring the color component sequence of the reproduced chrominance] signal (EPO):**
This subclass is indented under subclass E9.05. This subclass is substantially the same in scope as ECLA classification H04N9/873.
- E9.052 By assembling picture element blocks in an intermediate memory (EPO):**
This subclass is indented under subclass E9.05. This subclass is substantially the same in scope as ECLA classification H04N9/877.
- E9.053 Using a demodulator and a remodulator (e.g., for standard conversion, etc.) (EPO):**
This subclass is indented under subclass E9.05. This subclass is substantially the same in scope as ECLA classification H04N9/87B.
- E9.054 Involving the mixing of the reproduced video signal with a non-recorded signal (e.g., a text signal, etc.) (EPO):**
This subclass is indented under subclass E9.05. This subclass is substantially the same in scope as ECLA classification H04N9/87M.
- E9.055 Regeneration of a color reference signal (e.g., the color synchronization burst signal, the chrominance signal carrier, etc.) (EPO):**
This subclass is indented under subclass E9.05. This subclass is substantially the same in scope as ECLA classification H04N9/87R.
- E9.056 Signal drop-out compensation (EPO):**
This subclass is indented under subclass E9.05. This subclass is substantially the same in scope as ECLA classification H04N9/88.
- E9.057 The signal being a composite color television signal (EPO):**
This subclass is indented under subclass E9.056. This subclass is substantially the same in scope as ECLA classification H04N9/882.
- E9.058 Using a digital intermediate memory (EPO):**
This subclass is indented under subclass E9.057. This subclass is substantially the same in scope as ECLA classification H04N9/885.
- E9.059 For signals recorded by pulse code modulation (EPO):**
This subclass is indented under subclass E9.056. This subclass is substantially the same in scope as ECLA classification H04N9/888.
- E9.06 Time-base error compensation (EPO):**
This subclass is indented under subclass E9.05. This subclass is substantially the same in scope as ECLA classification H04N9/89.
- E9.061 Using an analogue memory (e.g., a CCD shift register, etc.) the delay of which is controlled by a voltage controlled oscillator (EPO):**
This subclass is indented under subclass E9.06. This subclass is substantially the same in scope as ECLA classification H04N9/893.
- E9.062 Using a digital memory with independent write-in and read-out clock generators (EPO):**
This subclass is indented under subclass E9.06. This subclass is substantially the same in scope as ECLA classification H04N9/896.
- E9.063 Using frequency multiplication of the reproduced color signal carrier with another auxiliary reproduced signal (e.g., a pilot signal carrier, etc.) (EPO):**
This subclass is indented under subclass E9.05. This subclass is substantially the same in scope as ECLA classification H04N9/898.

FOREIGN ART COLLECTIONS

The definitions below correspond to abolished sub-

classes from which these collections were formed. See the foreign art collection schedule of this class for specific correspondences. [Note: The titles and definitions for art collections include all the details of the one(s) that are hierarchically superior.]

FOR 100 PROCESSING OF COLOR TELEVISION SIGNAL FOR DYNAMIC RECORDING OR REPRODUCING:

This foreign art collection is indented under the class definition. Foreign art collection comprising apparatus having specific utility in treating a television signal including a chrominance component for dynamic storage or retrieval of the signal.

FOR 101 Drop-out correction:

This foreign art collection is indented under FOR 100. Foreign art collection comprising means for repairing a detected unsatisfactory signal condition (e.g., loss of signal or discontinuities in a signal, etc.) by substitution or regeneration.

FOR 102 Including switching means and delay means:

This foreign art collection is indented under FOR 101. Foreign art collection wherein means for repairing includes (a) an interrupter activated during the occurrence of the detected unsatisfactory signal condition and (b) a device which retards the television signal.

FOR 103 Editing:

This foreign art collection is indented under FOR 100. Foreign art collection including means for deleting from, adding to, or rearranging portions of a previously recorded color television signal.

FOR 104 Line, field, or frame skipping:

This foreign art collection is indented under FOR 100. Foreign art collection including means for deleting at least one line, field, or frame for every H lines, fields, or frames (H is an integer greater than two) of the color television signal at the time of recording.

FOR 105 Fast reproducing:

This foreign art collection is indented under FOR 100. Foreign art collection wherein a duration (i.e., a time interval by which a certain number of television frames is recorded

or reproduced) of the color television signal at the time of reproducing is less than that at the time of recording.

FOR 106 Slow reproducing:

This foreign art collection is indented under FOR 100. Foreign art collection wherein a duration (i.e., a time interval by which a certain number of television frames is recorded or reproduced) of the color television signal at the time of reproducing is greater than that at the time of recording.

FOR 107 Still reproducing:

This foreign art collection is indented under FOR 100. Foreign art collection in which one frame of the color television signal is repeatedly reproduced for a predetermined period of time.

FOR 108 Signal amplitude level control:

This foreign art collection is indented under FOR 100. Foreign art collection comprising means for controlling the instantaneous amplitude level or the envelope level of the color television signal during recording or reproducing.

FOR 109 Including color burst or reference signal:

This foreign art collection is indented under FOR 108. Foreign art collection where the amplitude of a color burst component signal is controlled, or a reference signal is monitored for controlling the amplitude of the color television signal.

- (1) Note. The reference signal may include, for example, a pilot or a color burst signal.

FOR 110 Color killer:

This foreign art collection is indented under FOR 109. Foreign art collection comprising means for suppressing or eliminating the amplitude of a chrominance component signal.

FOR 111 Synchronization signal modification:

This foreign art collection is indented under FOR 100. Foreign art collection comprising means for generating a signal which is added to or substituted for a synchronizing component of the color television signal.

FOR 112 Time (e.g., phase or frequency) correction:

This foreign art collection is indented under FOR 100. Foreign art collection for correction of timing error introduced during recording or reproducing of the color television signal.

FOR 113 By controlling relative transducer/record medium speed:

This foreign art collection is indented under FOR 112. Foreign art collection where the time correction is effected by regulating a speed of a transducer in relation to a record medium.

FOR 114 Disc:

This foreign art collection is indented under FOR 113. Foreign art collection where the record medium has a thin circular shape.

FOR 115 Using recorded reference (e.g., pilot signal):

This foreign art collection is indented under FOR 112. Foreign art collection where the time correction is effected by using a signal recorded on the record medium for that purpose.

- (1) Note. The recorded signal is not a standard component (e.g., luminance, chrominance, synchronization signals, color burst, etc.) of the television signal.

FOR 116 Phase or frequency matching of color television signal component to an external reference:

This foreign art collection is indented under FOR 112. Foreign art collection where the time correction is effected by comparing phase or frequency of a recorded color television component with that of a specified inputted signal from a remotely located source.

FOR 117 Using variable delay:

This foreign art collection is indented under FOR 116. Foreign art collection having a delay means, the delay time of which is alterable.

FOR 118 Color burst:

This foreign art collection is indented under FOR 116. Foreign art collection where the recorded color television component is a reference burst signal which serves as a color synchronizing signal to establish a frequency or phase reference for the chrominance signal.

FOR 119 Digital technique:

This foreign art collection is indented under FOR 112. Foreign art collection wherein the color television signal is converted to or from a signal composed of a series or pattern of identical pulse bits characterized solely by their presence or absence.

FOR 120 Recorder or reproducer fault condition compensation:

This foreign art collection is indented under FOR 100. Foreign art collection including means for correcting error introduced during recording or reproducing of the color television signal.

FOR 121 Crosstalk:

This foreign art collection is indented under FOR 120. Foreign art collection for the reduction or elimination of noise introduced by interference between at least two reproduced channels or two reproduced tracks.

- (1) Note. This subclass includes reduction of crosstalk between different tracks or channels, or cross talk between audio and video portions of the color television signal.

FOR 122 Heads having different azimuth angles:

This foreign art collection is indented under FOR 121. Foreign art collection wherein the reduction or elimination of crosstalk is effected by an arrangement of recording or reproducing heads in such a manner that angular displacements formed between head gaps and their respective recorded tracks are dissimilar.

FOR 123 Different phase between adjacent lines or fields of color television signal:

This foreign art collection is indented under FOR 121. Foreign art collection wherein the reduction or elimination of crosstalk is effected by continuously changing a phase of a carrier frequency signal which is used to

modulate at least a color television component.

FOR 124 Comb filtering:

This foreign art collection is indented under FOR 120. Foreign art collection comprising a multiple-series bandpass filter means for passing only frequencies within a number of narrow bands.

FOR 125 Frequency modulation for recording on the same track:

This foreign art collection is indented under FOR 100. Foreign art collection wherein components of the color television signal (e.g., luminance or chrominance, etc.), which occupy different frequency bands, are processed using specific frequency modulator or demodulator circuitry and are added for recording purpose.

- (1) Note. The specific frequency modulator or demodulator circuitry includes, for example, frequency mixer, converter, or shifter.

FOR 126 Compressing when recording or decompressing when reproducing:

This foreign art collection is indented under FOR 125. Foreign art collection wherein a parameter (bandwidth, data, time etc.) of at least one of the components of the color television signal is reduced at the time of writing-in, or increased at the time of reading-out while preserving its information content.

FOR 127 Phase shifting:

This foreign art collection is indented under FOR 125. Foreign art collection wherein the phase of a carrier frequency signal used to modulate at least one of the color television components is continuously changed.

FOR 128 Having another signal:

This foreign art collection is indented under FOR 125. Foreign art collection wherein at least one auxiliary signal (e.g., audio signal, pilot signal, graphic or picture information data, etc.) in addition to the frequency modulated color television signal is processed and recorded.

FOR 129 Using diffraction technique or strip filter:

This foreign art collection is indented under FOR 100. Foreign art collection including the use of a diffraction grating or a parallel or nonparallel line strip color filter for encoding color information onto a noncolor record receiver.

FOR 130 Separately processed primary color signals:

This foreign art collection is indented under FOR 100. Foreign art collection wherein primary color signals (i.e., red, blue, and yellow) are manipulated or treated as distinct signals before or after recording.

FOR 131 Separately recorded:

This foreign art collection is indented under FOR 130. Foreign art collection in which the processed primary color signals are recorded on separate tracks of a record receiver.

FOR 132 Compressing when recording or decompressing when reproducing:

This foreign art collection is indented under FOR 100. Foreign art collection wherein a parameter (bandwidth, data, time, etc.) of a component of the color television signal is reduced at the time of writing-in, or increased at the time of reading out while preserving its information content.

FOR 133 Digitizing, processing, and converting of analog color television signal:

This foreign art collection is indented under FOR 100. Foreign art collection comprising (1) means for converting an electrical analog color television signal into digital signal, (2) means for processing the converted digital signal, and (3) means for converting the processed digital signal back to an analog signal.

FOR 134 Selective recording or reproducing:

This foreign art collection is indented under FOR 100. Foreign art collection comprising means for specifying any of a plurality of color television signals, in different formats, to be recorded or reproduced.

- (1) Note. The different formats include, for example, NTSC (National Television System Committee), PAL (Phase Alternation Line), etc.

FOR 135 Channel splitting:

This foreign art collection is indented under FOR 100. Foreign art collection comprising means for separating the color television signal into signals inputted into two or more paths before recording.

FOR 136 High definition television recording or reproducing:

This foreign art collection is indented under FOR 100. Foreign art collection comprising means for recording or reproducing a high resolution or wide band color television signal having more scanning lines than that of a standard NTSC television signal.

FOR 137 Including television camera:

This foreign art collection is indented under FOR 100. Foreign art collection comprising a television camera having optical-electrical converting means for converting an optical image signal, obtained in a selected recording mode (e.g., still or motion, etc.), into an electrical image signal representing the color television signal.

FOR 138 Including audio signal:

This foreign art collection is indented under FOR 100. Foreign art collection wherein the color television signal and associated electrical signal containing frequency in the audible range are recorded onto a recording medium.

FOR 139 Digital recording or reproducing:

This foreign art collection is indented under FOR 100. Foreign art collection wherein the color television signal is recorded or reproduced in a form of a signal composed of a series or pattern of identical pulse bits characterized solely by their presence or absence.

FOR 140 Phase control of carrier signal:

This foreign art collection is indented under FOR 100. Foreign art collection wherein phase of a signal used to modulate at least a component of the color television is controlled.

- (1) Note. This subclass includes phase modulation of a carrier signal.

FOR 141 Using light or beam:

This foreign art collection is indented under FOR 100. Foreign art collection including means for recording the color television signal onto a dynamic photographic record medium (e.g., film, etc.), or for reproducing the signal therefrom.

- (1) Note. This subclass includes apparatus for recording video images on a film by scanning a light or beam across the film or by creating a hologram on the film.

FOR 142 Color signal in nonpictorial form:

This foreign art collection is indented under FOR 141. Foreign art collection including means for recording the color television signal in a form of a modulated track which is visibly unintelligible, or for reproducing such a signal.

FOR 143 Separately processed luminance and chrominance:

This foreign art collection is indented under FOR 100. Foreign art collection wherein components of the television signal (e.g., luminance or chrominance, etc.) are manipulated or treated as distinct signals before or after recording.

FOR 144 Using disc:

This foreign art collection is indented under FOR 100. Foreign art collection wherein the color television signal is recorded onto a record medium having thin circular shape.

FOR 145 PROCESSING OF TELEVISION SIGNAL FOR DYNAMIC RECORDING OR REPRODUCING:

This foreign art collection is indented under the class definition. Foreign art collection comprising apparatus having specific utility for treating a television signal for dynamic storage or retrieval of the signal.

FOR 146 Drop-out correction:

This foreign art collection is indented under FOR 145. Foreign art collection comprising means for repairing a detected unsatisfactory signal condition (e.g., loss of signal or discontinuities in a signal, etc.) by substitution or regeneration.

FOR 147 For synchronization signal:

This foreign art collection is indented under FOR 146. Foreign art collection wherein a television signal component composed of pulses at rates related to line and field frequencies for synchronizing scanning processes is detected and corrected.

FOR 148 Using static memory or delay means:

This foreign art collection is indented under FOR 146. Foreign art collection comprising a storage means (e.g., static memory or delay means, etc.) for temporarily holding information related to the detected unsatisfactory signal condition.

FOR 149 Interpolation:

This foreign art collection is indented under FOR 148. Foreign art collection comprising means for generating a compensated television signal by a mathematical process for estimating portions of the television signal.

FOR 150 Specific drop-out detection:

This foreign art collection is indented under FOR 145. Foreign art collection comprising details of circuitry for detecting an unsatisfactory signal condition.

FOR 151 Editing:

This foreign art collection is indented under FOR 145. Foreign art collection comprising means for deleting from, adding to, or rearranging portions of a previously recorded television signal.

FOR 152 Fading-in and fading-out:

This foreign art collection is indented under FOR 151. Foreign art collection including means for gradually and simultaneously increasing and decreasing the amplitudes of two image or video signals of previously recorded television signals in a manner that the amplitude of one image signal is attenuated to zero while that of the other is increased to a maximum value.

FOR 153 Audio signal:

This foreign art collection is indented under FOR 151. Foreign art collection wherein an electrical signal containing frequency in the audible range (15-20,000 hertz) is edited.

FOR 154 Editing decision list (EDL):

This foreign art collection is indented under FOR 151. Foreign art collection wherein the previously recorded television signal is edited by means of a lookup table containing at least address data associated with edit commands.

FOR 155 Rewrite after read:

This foreign art collection is indented under FOR 151. Foreign art collection including means for writing edited television signal in place of the previously recorded television signal reproduced from a recording medium by which the edited television signal is written onto.

FOR 156 Control track:

This foreign art collection is indented under FOR 151. Foreign art collection including a pulse signal recorded in a separate track, distinguished from television track for carrying out editing of the previously recorded television signal.

FOR 157 Phase comparison:

This foreign art collection is indented under FOR 156. Foreign art collection comprising a phase comparator means for generating a phase error signal by comparing phases of the signal recorded in the separate track with that of a reference signal.

FOR 158 Counting control pulse:

This foreign art collection is indented under FOR 156. Foreign art collections including a counter for counting a predetermined number of pulses in the pulse signal, thereby controlling the editing.

FOR 159 Numerical code:

This foreign art collection is indented under FOR 156. Foreign art collection wherein the pulse signal recorded in the separate track represents numbers.

FOR 160 Using synchronization signal:

This foreign art collection is indented under FOR 151. Foreign art collection wherein a television signal component composed of pulses at rates related to line and field frequencies for synchronizing scanning pro-

cesses is used to specify portions of the television signal to be edited.

FOR 161 Numerical code:

This foreign art collection is indented under FOR 160. Foreign art collection wherein the television signal component includes coded data representing numbers.

FOR 162 Having erasing head:

This foreign art collection is indented under FOR 151. Foreign art collection comprising an erasing transducer having means for deleting portions of the recorded television signal.

FOR 163 Having auxiliary dynamic memory means:

This foreign art collection is indented under FOR 151. Foreign art collection wherein edited television is recorded onto a relative movable recording medium (e.g., film, tape, card, disk, etc.) that is distinguished from a first recording medium for storing the previously recorded television signal.

FOR 164 Having time code for addressing signal:

This foreign art collection is indented under FOR 145. Foreign art collection wherein video information is recorded on a recording medium along with associated coded data for identifying location of the video information in hours, minutes, and seconds.

FOR 165 Synchronizing of recording or reproducing devices:

This foreign art collection is indented under FOR 145. Foreign art collection comprising means for maintaining a correct time relationship between events which occurred in at least two apparatus for processing television signals for dynamic recording or reproducing of the signals.

FOR 166 Long play recording:

This foreign art collection is indented under FOR 145. Foreign art collection wherein more information in the television signal is recorded by a reduction of recording medium speed without changing relative head-to-recording medium velocity.

FOR 167 Fast, slow, or stop reproducing:

This foreign art collection is indented under FOR 145. Foreign art collection for reproducing the television signal in such a manner that its duration is different from that at the time of recording.

FOR 168 Track searching:

This foreign art collection is indented under FOR 167. Foreign art collection wherein the television signal is reproduced by randomly accessing a desired track on a recording medium.

FOR 169 Disc:

This foreign art collection is indented under FOR 168. Foreign art collection wherein the recording medium has a thin circular shape.

FOR 170 Synchronization signal modification:

This foreign art collection is indented under FOR 167. Foreign art collection comprising means for generating a signal which is added to or substituted for a synchronizing component of the television signal.

FOR 171 Including head switching means:

This foreign art collection is indented under FOR 167. Foreign art collection including an interrupter activated during fast, slow, or stop reproducing for outputting video signal read out by a special reproducing head.

FOR 172 Interpolation:

This foreign art collection is indented under FOR 167. Foreign art collection including means for performing a mathematical process for estimating portions of the reproduced television signal.

FOR 173 Different azimuth:

This foreign art collection is indented under FOR 167. Foreign art collection including heads arranged in such a manner that angular displacements formed between head gaps and their respective recorded tracks are dissimilar.

- (1) Note. The heads include, for example, reproducing heads, recording and reproducing heads, and main and auxiliary heads.

FOR 174 Having audio:

This foreign art collection is indented under FOR 167. Foreign art collection including an electrical signal containing frequency in the audible range (15-20,000 hertz).

FOR 175 Noise reducing circuit:

This foreign art collection is indented under FOR 167. Foreign art collection including means for compensating effect of an unwanted electrical disturbance signal.

FOR 176 Having static memory:

This foreign art collection is indented under FOR 167. Foreign art collection comprising nonrelative movable storage means for temporarily storing the television signal during the fast, slow, or stop reproducing.

FOR 177 Locus or track control:

This foreign art collection is indented under FOR 167. Foreign art collection where a path that a reproducing transducer follows relative to a recorded track is controlled.

FOR 178 Using control signal on the recording medium:

This foreign art collection is indented under FOR 177. Foreign art collection wherein the path a reproducing transducer follows relative to a recorded track is controlled by a signal recorded on the recording medium for that purpose.

FOR 179 Automatic control of the speed of the medium:

This foreign art collection is indented under FOR 167. Foreign art collection wherein the fast, slow, or stop reproducing is carried out by controlling the speed of a record medium using a feedback signal.

FOR 180 Tape:

This foreign art collection is indented under FOR 167. Foreign art collection wherein the television signal is reproduced from a non-transparent elongated dynamic recording medium.

FOR 181 Disc:

This foreign art collection is indented under FOR 167. Foreign art collection wherein the television signal is reproduced from a recording medium having thin circular shape.

FOR 182 Including programmable apparatus:

This foreign art collection is indented under FOR 145. Foreign art collection including means for storing timed commands for executing a future recording or reproducing function.

FOR 183 Synchronization signal modification:

This foreign art collection is indented under FOR 145. Foreign art collection comprising means for generating a signal which is added to or substituted for a synchronizing component of the television signal.

FOR 184 Time (e.g., phase or frequency) correction:

This foreign art collection is indented under FOR 145. Foreign art collections for correction of a timing error introduced during recording or reproducing.

FOR 185 Of relative transducer/record medium speed:

This foreign art collection is indented under FOR 184. Foreign art collection where the time correction is effected by controlling a speed of a transducer in relation to a record medium.

FOR 186 By controlling speed of record medium:

This foreign art collection is indented under FOR 185. Foreign art collection wherein the relative speed is controlled by controlling speed of the record medium.

FOR 187 Using recorded reference (e.g., pilot signal):

This foreign art collection is indented under FOR 184. Foreign art collection where the time correction is effected by using a signal recorded on the record medium for that purpose.

- (1) Note. The recorded signal is not a standard component (e.g., luminance, chrominance, synchronization signals, color burst, etc.) of the television signal.

FOR 188 Using variable delay:

This foreign art collection is indented under FOR 184. Foreign art collection having a delay means, the delay time of which is alterable.

FOR 189 Digital technique:

This foreign art collection is indented under FOR 184. Foreign art collection wherein a television signal subjected to time base correction is a signal composed of a series or pattern of identical pulse bits characterized solely by their presence or absence.

FOR 190 By controlling read-write operations:

This foreign art collection is indented under FOR 189. Foreign art collection wherein the time base correction is carried out by generating write-in clock signal as a function of read-out clock signal.

FOR 191 Simultaneously recording of a plurality of television signals:

This foreign art collection is indented under FOR 145. Foreign art collection wherein at least two separated television signals are recorded at the same time.

FOR 192 Signal amplitude level control:

This foreign art collection is indented under FOR 145. Foreign art collection comprising means for controlling the instantaneous amplitude level or the envelope level of the television signal during recording or reproducing.

FOR 193 Record protection (e.g., anti-copying):

This foreign art collection is indented under FOR 145. Foreign art collection comprising means for modifying the television signal for inhibiting it from being recorded or reproduced.

- (1) Note. Means for modifying includes signal or pulse mixed to the television signal.
- (2) Note. This subclass includes systems for disabling the effect of means for inhibiting.

FOR 194 Having another signal:

This foreign art collection is indented under FOR 145. Foreign art collection wherein at least one auxiliary signal (e.g., code signal, timing signal, graphic or picture information data, message data, etc.) in addition to the television signal is processed and recorded.

- (1) Note. The auxiliary signal may be a secondary television signal.

FOR 195 Audio signal:

This foreign art collection is indented under FOR 194. Foreign art collection wherein the auxiliary signal is an electrical signal, the frequency of which is within the audio range (15-20,000 hertz).

FOR 196 Selective mode (e.g., mono, stereo, or bilingual):

This foreign art collection is indented under FOR 195. Foreign art collection including means for designating one of a plurality of different types of inputted audio signals (e.g., mono, stereo, bilingual, etc.) for recording or reproducing.

FOR 197 Multiplexing or demultiplexing:

This foreign art collection is indented under FOR 195. Foreign art collection wherein the television signal and the audio signal are combined and recorded such that at any instant of time either the television signal or the audio signal is presented at an output channel for recording, or the television signal and the audio signal are separated from a combined multiplexed signal to be outputted at two separated channels for reproducing.

FOR 198 Plurality of audio channels:

This foreign art collection is indented under FOR 197. Foreign art collection comprising at least two channels for inputting audio signals to be multiplexed with the television signal; or at least two output channels for outputting audio signals separated from the combined multiplexed signal.

FOR 199 Fault condition compensation:

This foreign art collection is indented under FOR 195. Foreign art collection including means for correcting an introduced error.

- (1) Note. The introduced error may be contained in the audio signal or may be caused by the presence of the audio signal.

FOR 200 Time compressing:

This foreign art collection is indented under FOR 195. Foreign art collection comprising means for reducing a length of time required for recording of the audio signal while preserving its information content.

FOR 201 Including mixing or adding means:

This foreign art collection is indented under FOR 195. Foreign art collection comprising means for combining the television signal and the audio signal to provide a composite signal for a unitary recording.

FOR 202 On a different substrate of the recording medium:

This foreign art collection is indented under FOR 195. Foreign art collection wherein the audio signal and the television signal are recorded on different layers of a recording medium.

FOR 203 Digital audio signal:

This foreign art collection is indented under FOR 195. Foreign art collection wherein the audio signal is provided in a form of a pulse train signal composed of a series or pattern of identical pulse bits characterized solely by their presence or absence.

FOR 204 Disc:

This foreign art collection is indented under FOR 203. Foreign art collection wherein the digital audio signal is recorded onto a record medium having thin circular shape.

FOR 205 Disc:

This foreign art collection is indented under FOR 195. Foreign art collection wherein the audio signal is recorded onto a record medium having thin circular shape.

FOR 206 Including television camera:

This foreign art collection is indented under FOR 195. Foreign art collection comprising a television camera having optical-electrical converting means for converting an optical image signal, obtained in a selected recording mode (e.g., still or motion, etc.), into an electrical image signal representing the television signal.

FOR 207 Television signal:

This foreign art collection is indented under FOR 194. Foreign art collection wherein the

auxiliary signal is a secondary television signal.

FOR 208 Compressing in recording or decompressing in reproducing:

This foreign art collection is indented under FOR 145. Foreign art collection wherein at least a parameter (bandwidth, data, time, etc.) of the television signal is reduced at the time of writing-in, or increased at the time of reading-out while preserving its information content.

FOR 209 Line, field, or frame skipping:

This foreign art collection is indented under FOR 208. Foreign art collection comprising means for deleting at least one line, field, or frame for every H lines, fields, or frames (H is an integer greater than two) of the television signal at the time of recording.

FOR 210 Intraframe or interframe:

This foreign art collection is indented under FOR 208. Foreign art collections wherein data of television signal is reduced for recording by coding each frame on a frame by frame basis, or by coding difference between video information in successive frames.

FOR 211 Digital compressing:

This foreign art collection is indented under FOR 208. Foreign art collection wherein the television signal to be compressed for recording is provided in a form of a pulse train signal composed of a series or pattern of identical pulse bits characterized solely by their presence or absence.

FOR 212 Recorder or reproducer fault condition compensation:

This foreign art collection is indented under FOR 145. Foreign art collection including means for correcting an error introduced during recording or reproducing.

FOR 213 Noise reduction:

This foreign art collection is indented under FOR 212. Foreign art collection wherein the introduced error includes an unwanted electrical disturbance signal.

FOR 214 Crosstalk:

This foreign art collection is indented under FOR 213. Foreign art collection wherein the electrical disturbance signal is noise caused by interference between at least two reproduced channels or two reproduced tracks.

- (1) Note. Included are reduction of crosstalk between different tracks or channels, and crosstalk between audio and video portions of the television signal.

FOR 215 Digital technique:

This foreign art collection is indented under FOR 212. Foreign art collection in which the error to be corrected is in a form of a pulse train signal composed of a series or pattern of identical pulse bits characterized solely by their presence or absence.

FOR 216 Including television camera:

This foreign art collection is indented under FOR 145. Foreign art collection comprising a television camera having optical-electrical converting means for converting an optical image signal into an electrical image signal representing the television signal.

FOR 217 Housing or mounting:

This foreign art collection is indented under FOR 216. Foreign art collection comprising means for enclosing or supporting at least a part of the television camera, or for mechanically connecting the camera with the apparatus for treating the television signal.

FOR 218 Synchronizing:

This foreign art collection is indented under FOR 216. Foreign art collection comprising means for locking operation of the television camera with that of the apparatus for treating the television signal.

FOR 219 Selective mode (e.g., still or motion):

This foreign art collection is indented under FOR 216. Foreign art collection wherein recording operation of the television camera can be switched between different processes to obtain the optical image signal.

FOR 220 Single still or frame recording:

This foreign art collection is indented under FOR 145. Foreign art collection wherein the television signal to be recorded is a signal representing information displayed on a

total area of one television screen (e.g., 525 horizontal scanning lines for NTSC, etc.).

FOR 221 Channel splitting:

This foreign art collection is indented under FOR 145. Foreign art collection comprising means for separating the television signal into signals inputted into two or more paths before recording.

FOR 222 High definition television recording or reproducing:

This foreign art collection is indented under FOR 145. Foreign art collection comprising means for recording or reproducing a high resolution or wide band television signal having more scanning lines than that of a standard NTSC television signal.

FOR 223 Digital recording or reproducing:

This foreign art collection is indented under FOR 145. Foreign art collection wherein the television signal is recorded or reproduced in a form of a pulse train signal composed of a series or pattern of identical pulse bits characterized solely by their presence or absence.

FOR 224 Using disc:

This foreign art collection is indented under FOR 145. Foreign art collection wherein the television signal is recorded onto a record medium having a thin circular shape.

FOR 225 Optical:

This foreign art collection is indented under FOR 224. Foreign art collection wherein the disc is responsive to a light beam (e.g., laser, etc.) for recording or reproducing of the television signal.

FOR 226 Onto thermoplastic record:

This foreign art collection is indented under FOR 145. Foreign art collection including the use of a plastic recording medium, onto which an electrostatic charge pattern corresponding to the television signal to be recorded is placed, then the plastic is heated so that it is deformed by electrostatic and surface tension forces in proportion to the charge laid down, the plastic is then allowed to cool, forming a recording of the television signal.

FOR 227 Using light or beam:

This foreign art collection is indented under FOR 145. Foreign art collection wherein the television signal is reproduced from or recorded onto a dynamic photographic record medium (e.g., film, etc.).

- (1) Note. This subclass includes apparatus for recording video images on a film by scanning a light or beam across the film or by creating a hologram on the film.

FOR 228 Recording at different frame rate:

This foreign art collection is indented under FOR 227. Foreign art collection wherein the television signal, occurring at 30 frames per second, is subjected to a 3:2 pull down technique such that it can be recorded on film moved at a rate of 24 frames per second.

FOR 229 Cathode-ray tube:

This foreign art collection is indented under FOR 227. Foreign art collection wherein the television signal is recorded on the record medium using a beam formed by a stream of electrons emitted from a cathode of an evacuated envelope.

FOR 230 Converting one television format to another:

This foreign art collection is indented under FOR 145. Foreign art collection comprising means for changing a television signal transmitted or recorded at a first standard scanning frequency to a television signal received or reproduced at a second standard scanning frequency without loss of information.

END