

**CLASS 380, CRYPTOGRAPHY****SECTION I - CLASS DEFINITION****SUBJECT MATTER UNDER THIS CLASS:**

This class includes equipment and processes which (a) conceal or obscure intelligible information by transforming such information so as to make the information unintelligible to a casual or unauthorized recipient, or (b) extract intelligible information from such a concealed representation, including breaking of unknown codes and messages.

- (1) Note. Cryptographic processing may include, e.g., scrambling or masking or their complementary transformations.
- (2) Note. All electrical communications equipment which processes an information signal for purposes of concealment are classified in this class.
- (3) Note. Processing or converting of a signal for purposes of handling or transmission which may incidentally render a signal unintelligible are not classified in this class.
- (4) Note. Mere blocking of access to the information is not considered a cryptographic transformation of the signal or information.
- (5) Note. A cryptogram or a cryptographic record absent a separate encrypting or decrypting device is classified elsewhere. See References to Other Classes, below.
- (6) Note. Excluded herein is nominal cryptography in combination with subject matter of another class. Such subject matter is classified with the other class. See search notes below.
- (7) Note. Excluded herein is subject matter of this class in combination with the specific environments of a) business data processing or b) electrical computer or digital processing system support. Such subject matter is classified elsewhere in the classes providing for the specific environment. See search notes below.
- (8) Note. During the latest reclassification project, a group of existing subclasses were

repositioned as is pending additional reclassification of this class. However, screening was not done within this group of subclasses or between this group and the other subclasses not part of the latest project. This should be taken into consideration when determining an appropriate field of search.

**SECTION II - REFERENCES TO OTHER CLASSES****SEE OR SEARCH CLASS:**

- |      |                                                                                                                                                                                                                                                           |
|------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 178, | Telegraphy, subclass 37 for a private printing recorder; subclass 99.1 for an acoustically shielded sounder.                                                                                                                                              |
| 235, | Registers, subclass 495 for a perforated, coded record (e.g., punched card or tape) reading template.                                                                                                                                                     |
| 283, | Printed Matter, subclass 73 for a printed or embossed article absent decryption structure.                                                                                                                                                                |
| 341, | Coded Data Generation or Conversion, subclasses 20+ and 173+, for code transmission, and 50+ for code conversion not specified as a concealing or cryptographic coding method.                                                                            |
| 342, | Communications: Directive Radio Wave Systems and Devices (e.g., Radar, Radio Navigation), subclasses 13+ for radar electronic warfare; subclasses 42+ for a radar transponder identification system.                                                      |
| 379, | Telephonic Communications, subclasses 188+ for telephone use or access blocking equipment.                                                                                                                                                                |
| 381, | Electrical Audio Signal Processing Systems and Devices, subclass 73.1 for electrically operated sound or noise masking.                                                                                                                                   |
| 399, | Electrophotography, subclass 12 for unit or part identification, subclass 84 for key sheet controlling job mode, and subclasses 366+ for document handling of unauthorized copy prevention.                                                               |
| 705, | Data Processing: Financial, Business Practice, Management, or Cost/Price Determination, subclasses 50 through 80 for business processing using cryptography and foreign art collection FOR 124 for cryptographic protection of electronic funds transfer. |
| 709, | Electrical Computers and Digital Processing Systems: Multicomputer Data Transferring or Plural Processor Synchronization, appropriate subclasses for data transferring among multiple computer and digital processing systems.                            |

- 710, Electrical Computers and Digital Data Processing Systems: Input/Output, subclasses 240 through 244 for generalized access blocking less cryptographic means or function.
- 711, Electrical Computers and Digital Processing Systems: Memory, subclasses 163+ for memory access limiting less cryptographic means or function.
- 713, Electrical Computers and Digital Processing Systems: Support, subclasses 150 through 194 for cryptographic electrical computer or digital processing system support, and foreign art collections FOR 123 and FOR 125 for cryptographic user or record authentication.
- 714, Error Detection/Correction and Fault Detection/Recovery, appropriate subclasses for generic error checking of digital devices.
- 725, Interactive Video Distribution Systems, subclasses 1 through 31 for billing, surveying, awarding credit, and access control or blocking in a video distribution system wherein the video encryption or scrambling may be nominally claimed.
- 726, Information Security, subclasses 1 through 36 for information security in computers or digital processing system.

intelligible to a recipient with proper authorization or equipment.

#### ENCRYPTING OR ENCIPHERING

A process of obscuring information by intentionally changing it to a form unintelligible to a casual or unauthorized observer.

#### KEY

A formula, word or signal used to define the code in encryption or decryption of the information. Such a signal is often a digital signal having a predetermined or pseudorandom content.

#### SUBCLASSES

##### 1 CRYPTANALYSIS:

This subclass is indented under the class definition. Subject matter which includes breaking of a secret code or cipher.

- (1) Note. After the code has been broken, use of the code for reception is classified elsewhere in this class.

##### 2 EQUIPMENT TEST OR MALFUNCTION INDICATION:

This subclass is indented under the class definition. Subject matter for evaluating or monitoring the condition of cryptographic equipment or equipment associated with a cryptographic system.

- (1) Note. Associated equipment includes testing or monitoring of diverse equipment (e.g. communication or display equipment) which would be classified in either the class providing for the particular equipment or in a testing class absent association with cryptographic equipment.

##### SEE OR SEARCH CLASS:

- 324, Electricity: Measuring and Testing, appropriate subclasses for electrical measuring and testing of general utility.
- 375, Pulse or Digital Communications, subclasses 224+ for testing or pulse or digital communications equipment.

### SECTION III - GLOSSARY

#### CIPHER

Information concealed by substitution or interchange of text characters for those in the original message.

#### CODE

Information concealed by substitution of words or symbols for words of the concealed message.

#### CRYPTOGRAPHY

The study of secret information storage or communication.

#### CRYPTANALYSIS

Determination of encryption code of encrypted message (i.e., codebreaking).

#### DECRYPTING OR DECIPHERING

A process of extracting concealed information from an intentionally obscured form and changing it into a form

**22 Having magnetic record carrier (e.g., tape, drum):**

This subclass is indented under subclass 9. Subject matter utilizing storage on or retrieval from a moving magnetic element for encoding the signal.

- (1) Note. The moving element is often an elongate web.

**SEE OR SEARCH CLASS:**

360, Dynamic Magnetic Information Storage or Retrieval, subclasses 7 and 8+ for delay, and for modification, respectively, of an electrical signal by recording and subsequent retrieval from a magnetic record medium.

705, Data Processing: Financial, Business Practice, Management, or Cost/Price Determination, subclasses 57 and 58 for preventing access to or copying of stored information in a distributed data file.

**26 Having mechanical control of signal encryption (e.g., cam):**

This subclass is indented under the subclass definition. Subject matter including an electrical element controlled by the motion of physical configuration of a solid object.

- (1) Note. The device in this subclass generally use a mechanically varying element as a cryptographic key.
- (2) Note. Included herein are cam controlled elements.

**27 By perforated record:**

This subclass is indented under subclass 26. Subject matter which controls cryptographic signal modification in accordance with a pattern of openings along the length of an elongate web.

- (1) Note. The elongate web may be a movable strip.
- (2) Note. The pattern of perforations may supply the encryption key.

**28 By particular algorithmic function encoding:**

This subclass is indented under the class definition. Subject matter wherein an algorithmic operation is performed upon a signal in order to encrypt the information signal.

- (1) Note. The processed signal may be the message signal.

**SEE OR SEARCH CLASS:**

708, Electrical Computers: Arithmetic Processing and Calculating, appropriate subclasses for a computer which performs a mathematical transformation.

**29 NBS/DES algorithm:**

This subclass is indented under subclass 28. Subject matter which encrypts a digital signal by a sequence including an initial 64-bit permutation, a 56-bit encryption-key dependent substitution block computation, and an inversion of the initial permutation.

- (1) Note. The details of this encryption algorithm are published in the U.S. Government standard: Federal Information Processing Standard (FIPS) publication No. 46, January 15, 1977, U.S. National Bureau of Standards.

**30 Public key:**

This subclass is indented under subclass 28. Subject matter including an encryption algorithm which is computationally infeasible to invert, and having distinct encryption and decryption keys.

- (1) Note. The encryption keys do not require secrecy and are usually published.

**31 Plural modulation of single carrier:**

This subclass is indented under subclass 270. Subject matter which modulates a carrier with more than one signal or varies more than one signal parameter.

- (1) Note. The additional signal may be scrambling signal or another information signal.

- SEE OR SEARCH CLASS:  
 370, Multiplex Communications, subclass 204 for multiplexing by plural forms of modulation; subclasses 343+ and 480+ for combining or distributing information via frequency channels.  
 381, Electrical Audio Signal Processing Systems and Devices, subclasses 4+ for stereophonic signal broadcasting using an AM receiver.  
 455, Telecommunications, subclass 61 for a carrier wave system using plural modulation for a signal message absent cryptographic equipment.
- 32 Wobbling of carrier:**  
 This subclass is indented under subclass 31. Subject matter which varies the frequency of an information modulated carrier signal periodically over a definite range.
- 33 Using plural paths or channels:**  
 This subclass is indented under subclass 270. Subject matter which transmits an information signal or a portion thereof over different communications links simultaneously, serially, or alternately.
- (1) Note. This subclass includes an alternate nonencrypted communications path.
- SEE OR SEARCH CLASS:  
 340, Communications: Electrical, subclasses 825.03+ for selective communication channel selection, absent encryption.  
 379, Telephonic Communications, subclasses 242+ for selective switching of a nonencrypted telephone circuit.
- 34 Plural carrier frequencies:**  
 This subclass is indented under subclass 33. Subject matter which transmits different composite parts of an information signal over carrier waves of different frequencies.
- SEE OR SEARCH CLASS:  
 455, Telecommunications, subclass 59 for a system which transmits a signal message over plural carrier waves absent message concealment.
- 35 Variable time delay modulation:**  
 This subclass is indented under subclass 255. Subject matter which applies varying amounts of time delay to the information signal.
- SEE OR SEARCH THIS CLASS, SUBCLASS:  
 36+, for encryption by time segment interchange.
- SEE OR SEARCH CLASS:  
 332, Modulators, subclasses 144+ for phase modulation by an information signal.
- 36 Time segment interchange:**  
 This subclass is indented under subclass 255. Subject matter which divides the message signal into time interval segments the order of which are interchanged.
- (1) Note. Excluded herein is this subject matter which involves a magnetic record carrier. Such subject matter is classified with electric signal modification by magnetic record carrier. See search notes below.
- SEE OR SEARCH THIS CLASS, SUBCLASS:  
 22, for this subject matter which interchanges time segments by use of a magnetic record carrier.
- 37 Block/data stream enciphering:**  
 This subclass is indented under subclass 36. Subject matter wherein time interchanged data segments are processed either in discrete blocks, or a continuous stream, of bits or pulses which serially comprise the message stream.
- 38 Frequency shift or inversion:**  
 This subclass is indented under subclass 255. Subject matter which modifies a segment of the frequency spectrum of the information signal.
- SEE OR SEARCH CLASS:  
 370, Multiplex Communications, subclasses 343+ and 480+ for combining or distributing information via frequency channels, absent cryptography.

- 375, Pulse or Digital Communications, subclasses 240+ for bandwidth compression or expansion to facilitate digital signal handling, rather than conceal information.
- 704, Data Processing: Speech Signal Processing, Linguistics, Language Translation, and Audio Compression/Decompression, subclasses 500+ for audio signal bandwidth compression or expansion for purposes other than concealment of information.
- 39 Having plural band pass filters:**  
This subclass is indented under subclass 38. Subject matter which divides the signal into a plurality of subbands by filtering prior to a frequency shift or inversion.
- 40 Having plural band pass filters:**  
This subclass is indented under subclass 255. Subject matter which divides the signal into a plurality of subbands by filtering prior to further encryption.
- 41 Having quantizing and subsequent normalizing of signal (e.g., reentry telephone circuitry):**  
This subclass is indented under subclass 257. Subject matter wherein the message signal amplitude is divided into discrete amplitude ranges which are subsequently weighted and combined.
- SEE OR SEARCH CLASS:  
341, Coded Data Generation or Conversion, subclass 200 for quantizing of an analog signal.  
375, Pulse or Digital Communications, appropriate subclasses for pulse code modulation equipment.
- 42 Data stream/substitution enciphering:**  
This subclass is indented under subclass 255. Subject matter which encrypts a message signal composed of a stream of data elements serially and continuously to produce a stream of the corresponding encrypted data elements.
- (1) Note. The encryption may be performed by either modification of substitution of the data stream elements.
- SEE OR SEARCH THIS CLASS, SUBCLASS:  
37, for this subject matter combined with time segment interchange.
- 43 Key sequence signal combined with data signal:**  
This subclass is indented under subclass 42. Subject matter wherein a predetermined sequence of digital signals is combined element-for-element with the message signal data elements to produce an encrypted or decrypted signal.
- SEE OR SEARCH THIS CLASS, SUBCLASS:  
278, and 279-285 for distribution of the key signal.
- 44 Having particular key generator:**  
This subclass is indented under subclass 277. Subject matter including a detail of a predetermined digital sequence signal generator.
- SEE OR SEARCH CLASS:  
331, Oscillators, subclass 78 for a random oscillator.  
708, Electrical Computers: Arithmetic Processing and Calculating, subclasses 250+ for a random digital signal generator.
- 45 Multiple key level:**  
This subclass is indented under subclass 44. Subject matter including plural encrypting or decrypting stages each of which has a separate key.
- 46 Nonlinear (e.g., pseudorandom):**  
This subclass is indented under subclass 44. Subject matter wherein the key signal does not vary in a constant or predictable manner.
- (1) Note. Included herein is a pseudorandom key signal generator.
- 47 Plural generators:**  
This subclass is indented under subclass 44. Subject matter which includes more than one generator to produce the predetermined signal sequence.

**51 Having production of printed copy (e.g., printer, typewriter):**

This subclass is indented under the class definition. Subject matter which generates a permanent visible record of either the encrypted or decrypted characters.

SEE OR SEARCH THIS CLASS, SUBCLASS:

- 52, for an electrical cryptographic device controlled by a keyboard not limited to a typewriter.
- 55, for an electrical cryptographic device controlled by a keyboard not limited to a typewriter.
- 243, and 244-246 for reproduction of an optically scanned document image in cryptographic equipment.

SEE OR SEARCH CLASS:

- 400, Typewriting Machines, subclass 90 for a typewriter having electrical key reassignment without message concealment (e.g., 'QWERTY' to 'DVORAK' conversion).

**52 Including particular structure or housing (e.g., display, keyboard):**

This subclass is indented under the class definition. Subject matter which includes a detail of the configuration or arrangement of the cryptographic equipment of communications equipment connected thereto.

- (1) Note. Such equipment may include an enclosure, keyboard display, etc.

SEE OR SEARCH CLASS:

- 341, Coded Data Generation or Conversion, subclasses 22+ for a keyboard controlled noncryptographic encoding circuit.

**53 Audio transducer mounting or structure:**

This subclass is indented under subclass 52. Subject matter including a structural detail of an audio sensing or reproducing transducer or a mounting therefor.

SEE OR SEARCH CLASS:

- 181, Acoustics, appropriate subclasses for an audio transducer housing.

- 379, Telephonic Communications, appropriate subclasses for a bidirectional speech circuit or audio terminal, not including cryptographic equipment.

- 381, Electrical Audio Signal Processing Systems and Devices, subclasses 150+ for an electrical transducer not connected to cryptographic equipment.

**54 BY MODIFYING OPTICAL IMAGE (E.G., TRANSMISSIVE OVERLAY):**

This subclass is indented under the class definition. Subject matter which changes the visible appearance of an object so as to encrypt visible markings, or to decode the appearance of the object into intelligible visible markings.

SEE OR SEARCH CLASS:

- 283, Printed Matter, subclasses 17 and 73 for an object with encrypted information printed or embossed thereon.
- 359, Optical: Systems and Elements, appropriate subclasses for optically transmissive elements, particularly subclasses 1+ for a holographic element; subclasses 619+ for a surface composed of lenticular elements; subclasses 885+ for an optical filter.
- 399, Electrophotography, subclass 12 for unit or part identification, subclass 84 for key sheet controlling job mode, and subclasses 366+ for document handling of unauthorized copy prevention.

**55 HAVING PRODUCTION OF PRINTED COPY (E.G., CRYPTOGRAPHIC PRINTER OR TYPEWRITER):**

This subclass is indented under the class definition. Subject matter which generates a permanent visible record of either the encrypted or decrypted characters.

SEE OR SEARCH CLASS:

- 400, Typewriting Machines, subclasses 89+ for a typewriter having key reassignment without message concealment (e.g., 'QWERTY' to 'DVORAK' conversion).

**56 SELECTIVELY MOVABLE ELEMENT HAVING CODE CHARACTERS:**

This subclass is indented under the class definition. Subject matter for encrypting a message signal which is composed of distinct intelligible characters which are visibly positioned on relatively movable surfaces to enable transposing or substituting such characters.

- (1) Note. The term 'character' is intended to mean at least a distinct intelligible element, but also includes phrases, numbers, etc., as the intelligence bearing or the encrypted message

**57 Rotatable:**

This subclass is indented under subclass 56. Subject matter wherein adjacent movable character bearing surfaces have a circular motion component.

**58 Characters on peripheral surfaces (e.g., cylinder section):**

This subclass is indented under subclass 57. Subject matter wherein the character bearing surface is on an edge surface of a movable element.

**SEE OR SEARCH CLASS:**

- 399, Electrophotography, subclass 12 for unit or part identification, subclass 84 for key sheet controlling job mode, and subclasses 366+ for document handling of unauthorized copy prevention.

**59 MISCELLANEOUS:**

This subclass is indented under the class definition. Subject matter not provided for in any of the preceding subclasses.

**200 VIDEO CRYPTOGRAPHY:**

Subject matter wherein a video signal representative of a time varying object or image is made unintelligible.

- (1) Note. Processing of a picture signal representing a static image is classified elsewhere.

**SEE OR SEARCH THIS CLASS, SUBCLASS:**

- 243, for facsimile cryptography.

**SEE OR SEARCH CLASS:**

- 348, Television, appropriate subclasses for television processing absent encryption.  
358, Facsimile and Static Presentation Processing, appropriate subclasses for facsimile equipment absent signal encryption.

**201 Copy protection or prevention:**

This subclass is indented under 200. Subject matter which prevents rerecording of a stored picture signal representative of a time varying object or image.

**SEE OR SEARCH CLASS:**

- 360, Dynamic Magnetic Information Storage or Retrieval, subclass 60 for recording or erasing prevention.  
369, Dynamic Information Storage or Retrieval, subclasses 84 and 85 for dynamic record rerecording.  
705, Data Processing: Financial, Business Practice, Management, or Cost/Price Determination, subclasses 57 and 58 for copy protection or prevention of distributed data files.

**202 Having origin or program ID:**

This subclass is indented under 201. Subject matter wherein a video signal which is copy protected is supplemented by a unique identifier of a source or picture signal.

**203 Having copy protect signal:**

This subclass is indented under 201. Subject matter wherein a video signal which is copy protected is supplemented by a separate signal indicating a protection mode.

**204 Modifying sync signal:**

This subclass is indented under 201. Subject matter wherein the signal for proper timing of a dynamic playback system is altered.

**SEE OR SEARCH THIS CLASS, SUBCLASS:**

- 221, for generic video sync modification.

**205 Video electric signal masking:**

This subclass is indented under 200. Subject matter wherein the characteristics of an information bearing video electric signal are

- obscured by the addition of an extraneous interfering signal.
- (1) Note. Obscuring of a video display by an optical overlay is classified elsewhere.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:  
54, for modifying an optical image by an overlay.  
252, 253, and 254 for electric signal masking in general.
- 206 Masking of synchronization signal:**  
This subclass is indented under 205. Subject matter wherein the interfering signal is combined with the video electric signal to obscure a scanning time component.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:  
221, for generic video sync modification.
- 207 Including locally generated masking signal:**  
This subclass is indented under 205. Subject matter wherein the masking signal is produced and added at or near a receiver.
- 208 Including filter for removing masking signal:**  
This subclass is indented under 205. Subject matter wherein an electronic circuit eliminates the interfering signal.
- SEE OR SEARCH CLASS:  
327, Miscellaneous Active Electrical Non-linear Devices, Circuits, and Systems, subclass 552 for active filters.  
333, Wave Transmission Lines and Networks, subclasses 167 through 185 for passive filters.  
708, Electrical Computers: Arithmetic Processing and Calculating, subclasses 300+ for filtering by digital computer and subclass 819 for filtering by analog calculating computer.
- 209 Masking signal selectively addressed:**  
This subclass is indented under 205. Subject matter wherein an interfering signal is directed to a particular subscriber.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:  
240, for an addressed scrambling decoder control signal.
- 210 Video electric signal modification (e.g., scrambling):**  
This subclass is indented under 200. Subject matter wherein a video electric signal is made unintelligible by varying at least one of its parameters.
- (1) Note. The electric signal may be analog or digital.  
(2) Note. The modification may include such operations as transposition.  
(3) Note. The parameter may include a synchronization component.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:  
287, through 53 for modification (e.g., scrambling) of an electric signal in general.
- 211 Interactive TV:**  
This subclass is indented under 210. Subject matter including two-way communication with a TV signal source.
- SEE OR SEARCH CLASS:  
725, Interactive Video Distribution Systems, subclass 31 for access control or blocking in the interactive video wherein the video signal scrambling is nominally claimed.
- 212 Plural video stream multiplexing:**  
This subclass is indented under 210. Subject matter wherein multiple video streams are combined into a single video stream
- SEE OR SEARCH CLASS:  
370, Multiplex Communications, appropriate subclasses for multiplexing in general.
- 213 Chrominance scrambling:**  
This subclass is indented under 210. Subject matter wherein the portion of a video signal which conveys color information is modified.



## SEE OR SEARCH CLASS:

348, Television, subclasses 571 through 721 for chrominance signal processing in general.

**214 Nonstandard scan pattern of video information:**

This subclass is indented under 210. Subject matter wherein the normal ordering of the scan components is modified.

(1) Note. Examples of a nonstandard scan pattern are: nonadjacent scan lines, oppositely directed scan lines, or nonsequential video information in standard scan line.

(2) Note. Scan components are: line segments, lines, fields, and frames.

## SEE OR SEARCH THIS CLASS, SUBCLASS:

222, for a modified sync signal having phase inversion of scan line information.

235, for phase inversion of scan line information.

245, for a facsimile nonstandard scan pattern.

**215 Line cut and shuffle:**

This subclass is indented under 214. Subject matter wherein an individual scan line is segmented and then the order of the segments is rearranged.

**216 Image data converted to digital before modification:**

This subclass is indented under 210. Subject matter wherein a baseband video signal is digitized prior to signal modification.

**217 Having compression (e.g., MPEG):**

This subclass is indented under 216. Subject matter wherein the quantity of data representing the converted image data is reduced prior to further processing.

## SEE OR SEARCH THIS CLASS, SUBCLASS:

269, for cryptographic communication system having compression.

## SEE OR SEARCH CLASS:

348, Television, subclasses 384 through 440 for television with bandwidth reduction.

704, Data Processing: Speech Signal Processing, Linguistics, Language Translation, and Audio Compression/Decompression, subclasses 503 and 504 for audio signal time compression or expansion.

708, Electrical Computers: Arithmetic Processing and Calculating, subclass 203 for compression/decompression by digital computer.

**218 Variable time delay modulation of baseband video signal:**

This subclass is indented under 210. Subject matter which modifies a picture signal before carrier modulation by application of varying amounts of time delay.

(1) Note. This and indented subclasses also include time shifting between video information and synchronizing signals.

## SEE OR SEARCH THIS CLASS, SUBCLASS:

35, for encryption of other than picture signals by variable time delay modulation.

**219 Carrier phase shift:**

This subclass is indented under 210. Subject matter in which a picture signal modulated onto a carrier wave is modified by a phase change of the carrier.

**220 Carrier frequency conversion:**

This subclass is indented under 210. Subject matter under subclass 210 in which the frequency of a carrier wave is modified for encryption.

## SEE OR SEARCH THIS CLASS, SUBCLASS:

38, and 39 for similar subject matter used with other than video information.

**221 By modifying synchronizing signal:**

This subclass is indented under 210. Subject matter which modifies a synchronizing component of the video signal.

- SEE OR SEARCH THIS CLASS, SUB-CLASS:  
206, for masking of video sync signal.
- 222 Including phase inversion of scan line information:**  
This subclass is indented under 221. Subject matter which inverts the phase of selected video scan line information signals.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:  
235, for phase inversion of scan line information in general.
- 223 Key signal on separate carrier:**  
This subclass is indented under 221. Subject matter wherein the signal needed to restore the modified synchronizing component is transmitted on a carrier distinct from the video carrier.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:  
239, for encrypted code signal of a video signal and subclass 240 for addressed code control of a video signal.
- 224 Including pseudo-synchronizing pulse:**  
This subclass is indented under 221. Subject matter wherein the modification includes the addition of a false synchronizing pulse.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:  
204, for video copy protection with modified sync signal.
- 225 Self-synchronizing circuit at receiver:**  
This subclass is indented under 221. Subject matter wherein the synchronizing component is regenerated by a circuit detecting a nonstandard timing characteristic of the modified video signal.
- (1) Note. The circuit does not rely on a key signal for timing.
- 226 Key signal in blanking interval:**  
This subclass is indented under 221. Subject matter wherein the signal needed to restore the modified synchronizing component is transmitted during a video retrace portion.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:  
239, for encrypted code signal of a video signal and subclass 240 for addressed code control of a video signal.
- 227 Record or coin controlled:**  
This subclass is indented under 210. Subject matter wherein a video signal is made intelligible through the use of an object bearing a code or providing a medium of exchange.
- (1) Note. Such objects may include coins and other currency, or credit and debit cards.
- SEE OR SEARCH CLASS:  
194, Check-Actuated Control Mechanisms, appropriate subclasses for coin operated equipment of general utility.  
235, Registers, subclasses 375 through 386 for coded record operated equipment, absent cryptographic equipment.  
705, Data Processing: Financial, Business Practice, Management, or Cost/Price Determination, subclasses 65 through 69 for a cryptographic secure transaction using an intelligent token.  
713, Electrical Computers and Digital Processing Systems: Support, subclasses 172 through 174 for cryptographic multiple computer communication authentication using intelligent token.  
725, Interactive Video Distribution Systems, subclasses 1 through 31 for billing, surveying, awarding credit, and access control or blocking in a video distribution system wherein the video encryption or scrambling may be nominally claimed.  
726, Information Security, subclasses 1 through 36 for information security in computers or digital processing system.
- 228 Including key on record:**  
This subclass is indented under 227. Subject matter wherein a portable carrier provides a signal for encryption or decryption.

**229 Including authentication:**

This subclass is indented under 227. Subject matter wherein the processing validates a portable carrier or the receiver.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

232, for video signal modification which has usage or charge determination including authentication, subclasses 247-250 for cellular phone cryptographic authentication, and subclass 258 for a communication system which is position dependent or has authentication.

SEE OR SEARCH CLASS:

705, Data Processing: Financial, Business Practice, Management, or Cost/Price Determination, subclass 67 for secure transaction cryptographic processing (e.g., EFT / POS) including authentication.

713, Electrical Computers and Digital Processing Systems: Support, subclasses 155 through 159 for multiple computer communication using cryptography having central trusted authority providing computer authentication, subclass 161 for multiple computer communication using cryptography where packet header denotes cryptographically protected data and having data authentication, and subclasses 168-181 for multiple computer communication using cryptography having particular communication authentication technique, particularly subclasses 172-174 for a multiple computer communication system using cryptography with authentication using an intelligent token.

**230 Including usage recording:**

This subclass is indented under 227. Subject matter wherein data representing program descrambling activity is written to a storage device.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

231, through 234 for video usage determination.

**231 Usage or charge determination:**

This subclass is indented under 210. Subject matter including determining the amount of use or a cost associated therewith in making the modified video signal intelligible.

SEE OR SEARCH CLASS:

705, Data Processing: Financial, Business Practice, Management, or Cost/Price Determination, subclasses 52 through 54 for usage protection of distributed data files including usage or charge determination, subclasses 77 through 79 for a cryptographic electric commerce system including billing and subclasses 1.1 and 2 through 45 for automated electrical financial or business practice or management arrangement.

**232 Including authentication:**

This subclass is indented under 231. Subject matter wherein the usage or charge determination includes validation.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

229, for video signal modification which is record or coin controlled and includes authentication, subclasses 247-250 for cellular phone cryptographic authentication, and subclass 258 for a communication system which is position dependent or has authentication.

SEE OR SEARCH CLASS:

705, Data Processing: Financial, Business Practice, Management, or Cost/Price Determination, subclass 67 for secure transaction cryptographic processing (e.g., EFT / POS) including authentication.

713, Electrical Computers and Digital Processing Systems: Support, subclasses 155 through 159 for multiple computer communication using cryptography having central trusted authority providing computer authentication, subclass 161 for multiple computer communication using cryptography where packet header denotes cryptographically protected data and having data authentication, and subclasses

168-181 for multiple computer communication using cryptography having particular communication authentication technique.

**233 Including usage or charge recording at subscriber station:**

This subclass is indented under 231. Subject matter wherein data representing program descrambling activity or cost thereof is written to a storage device at a user's location.

**234 Including display of supplemental information:**

This subclass is indented under 231. Subject matter wherein cost or auxiliary program data is presented to a user.

**235 Phase inversion of scan line information:**

This subclass is indented under 210. Subject matter which inverts the phase of selected video scan line information signals.

SEE OR SEARCH THIS CLASS, SUBCLASS:

38, and 39 for encryption using phase inversion not limited to video communication.

78, for nonstandard video scan pattern.

219, for video carrier phase shift.

222, for sync signal modification with phase inversion.

**236 Modifying accompanying audio signal:**

This subclass is indented under 210. Subject matter wherein a parameter of an audio signal is varied so as to render the sound unintelligible in a conventional receiver.

SEE OR SEARCH THIS CLASS, SUBCLASS:

275, and 276 for communication speech scrambler detail.

**237 Including digital audio:**

This subclass is indented under 236. Subject matter wherein the modified audio is transmitted as a series of pulses.

SEE OR SEARCH CLASS:

700, Data Processing: Generic Control Systems or Specific Applications, subclass 94 for digital audio signal processing not elsewhere provided for.

704, Data Processing: Speech Signal Processing, Linguistics, Language Translation, and Audio Compression/Decompression, appropriate subclasses for speech signal processing in general.

**238 Including frequency modification of audio signal or frequency shifting of audio carrier:**

This subclass is indented under 236. Subject matter wherein audio modification occurs by varying a frequency characteristic of an audio signal or by frequency shifting of an audio carrier.

**239 Encrypted code control signal:**

This subclass is indented under 210. Subject matter wherein a control coding signal modifying the video electric signal has itself been made unintelligible.

SEE OR SEARCH THIS CLASS, SUBCLASS:

277, through 47 for cryptographic key management.

**240 Including addressed decoder control signal:**

This subclass is indented under 210. Subject matter wherein a control coding signal includes a designation of a particular descrambling device.

**241 Having program ID or authorization:**

This subclass is indented under 240. Subject matter wherein the addressed decoder signal includes a unique identifier for a particular video signal or access thereto.

**242 Having command signal for receiver:**

This subclass is indented under 240. Subject matter wherein the addressed decoder signal provides for actuation or modification of receiver operation.

**243 FACSIMILE CRYPTOGRAPHY:**  
Subject matter including an optically scanned static picture represented by an electrical signal which has been made unintelligible.

- (1) Note. Processing of a picture signal representing a time varying object or image is classified elsewhere.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

- 51, for generating a printed record of decrypted characters, rather than an image of a document.  
200, and 242 for video cryptography of a time varying image.

SEE OR SEARCH CLASS:

- 348, Television, appropriate subclasses for television processing absent encryption.  
358, Facsimile and Static Presentation Processing, appropriate subclasses for facsimile equipment absent signal encryption.

**244 Synchronization:**  
This subclass is indented under 243. Subject matter including a signal for placing a transmitter and receiver into a particular in step relationship.

**245 Nonstandard scan pattern:**  
This subclass is indented under 243. Subject matter wherein the normal ordering of the scan components is modified.

- (1) Note. Examples of a nonstandard scan pattern are: nonadjacent scan lines, oppositely directed scan lines, or nonsequential video information in a standard scan line.  
(2) Note. Scan components are: line segments, lines, fields, and frames.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

- 214, and 215 for nonstandard scan pattern of video information.  
235, for phase inversion of scan line information.

**246 Including generation of an associated coded record:**

This subclass is indented under 243. Subject matter wherein a machine readable indicia is produced which is representative of the scanned static picture.

SEE OR SEARCH CLASS:

- 713, Electrical Computers and Digital Processing Systems: Support, subclass 179 for digital signature representation with generation of associated coded record.

**247 CELLULAR TELEPHONE CRYPTOGRAPHIC AUTHENTICATION:**

Subject matter wherein use of a cellular telephone system is restricted to an authorized subscriber by the use of an encryption method.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

- 229, for video signal modification which is record or coin controlled and includes authentication, subclass 232 for video signal modification which has usage or charge determination including authentication, subclass 258 for a communication system which is position dependent or has authentication, and subclasses 270 - 274 for cryptography in a wireless communication system.

SEE OR SEARCH CLASS:

- 370, Multiplex Communications, subclasses 352 through 356 for internet telephony.  
379, Telephonic Communications, appropriate subclasses for wired telephone systems.  
455, Telecommunications, subclass 411 for radiotelephone authentication in general.  
705, Data Processing: Financial, Business Practice, Management, or Cost/Price Determination, subclass 67 for secure transaction cryptographic processing (e.g., EFT / POS) including authentication.

- 713, Electrical Computers and Digital Processing Systems: Support, subclasses 155 through 159 for multiple computer communication using cryptography having central trusted authority providing computer authentication, subclass 161 for multiple computer communication using cryptography where packet header denotes cryptographically protected data and having data authentication, and subclasses 168 - 181 for multiple computer communication using cryptography having particular communication authentication technique.
- 726, Information Security, subclasses 1 through 36 for information security in computers or digital processing system.
- 248 Visiting center:**  
This subclass is indented under 247. Subject matter wherein authorization to a cellular system other than the subscriber's home system is processed through an intermediary.
- SEE OR SEARCH CLASS:  
455, Telecommunications, subclass 433 for cellular roaming processing in general which includes visitor location registration detail.
- 249 Initialization:**  
This subclass is indented under 247. Subject matter wherein cryptographic information necessary for authentication is preloaded.
- 250 Usage pattern detection:**  
This subclass is indented under 247. Subject matter wherein authorization is permitted by comparing current usage with previous usage.
- 251 ELECTRONIC GAME USING CRYPTOGRAPHY:**  
Subject matter including an electronic amusement device having a signal therein protected by cryptographic structure or methods.
- SEE OR SEARCH CLASS:  
463, Amusement Devices: Games, subclasses 1 through 47 for computer games in general.
- 252 ELECTRIC SIGNAL MASKING:**  
Subject matter wherein the characteristics of an information bearing electric signal are obscured by the addition of an extraneous interfering signal.
- SEE OR SEARCH THIS CLASS, SUBCLASS:  
205, and 206-209 for video electric signal masking.  
210, and 211-242 for video signal encryption by scrambling.  
287, through 53 for signal encryption in general by scrambling or other modification.
- SEE OR SEARCH CLASS:  
455, Telecommunications, subclass 1 for jamming of a modulated carrier wave signal.
- 253 By signal having discrete frequency component:**  
This subclass is indented under 252. Subject matter wherein the masking signal is formed from a finite number of individual frequency components.
- 254 By signal having discrete step amplitude variation:**  
This subclass is indented under 252. Subject matter wherein the amplitude of the masking signal varies in discrete steps.
- 255 COMMUNICATION SYSTEM USING CRYPTOGRAPHY:**  
Subject matter including cryptographic structure or methods which protect the transmission or reception of information.
- (1) Note. Key distribution is excluded herein and classified elsewhere with key management.
- SEE OR SEARCH THIS CLASS, SUBCLASS:  
277, through 47 for key management and particularly subclasses 278-285 for key distribution.

## SEE OR SEARCH CLASS:

- 340, Communications, Electrical, appropriate subclasses for electrical communication in general.
- 370, Multiplex Communications, appropriate subclasses for multiplex communication in general.
- 375, Pulse or Digital Communications, appropriate subclasses for generic digital communication.
- 379, Telephonic Communications, appropriate subclasses for wired telephone systems in general.
- 455, Telecommunications, appropriate subclasses for telecommunication including a modulated carrier.

**256 Fiber optic network:**

This subclass is indented under 255. Subject matter including plural nodes joined by an optical waveguide for the transmission or reception of light waves.

## SEE OR SEARCH CLASS:

- 359, Optical: Systems and Elements, subclasses 109 through 195 for optical communication systems that may include an optical waveguide absent encryption.

**257 Circuit switched network (e.g., wired telephone):**

This subclass is indented under 255. Subject matter wherein protection of the transmission or reception of information occurs in a system having plural nodes joined by switched physical links (usually two-way voice).

- (1) Note. Excluded herein is symmetric key cryptography which includes a modem. This is classified elsewhere.

## SEE OR SEARCH THIS CLASS, SUBCLASS:

- 266, for symmetric key cryptography which includes a modem.
- 275, through 276 for speech scrambling detail per se.

## SEE OR SEARCH CLASS:

- 379, Telephonic Communications, appropriate subclasses for wired telephone circuits in general.

**258 Position dependent or authenticating:**

This subclass is indented under 255. Subject matter wherein cryptographic protection is based upon or validates the spatial location of a transmitter or receiver.

## SEE OR SEARCH THIS CLASS, SUBCLASS:

- 229, for video signal modification which is record or coin controlled and includes authentication, subclass 232 for video signal modification which has usage or charge determination including authentication, and subclasses 247-250 for cellular phone cryptographic authentication.

## SEE OR SEARCH CLASS:

- 342, Communications: Directive Radio Wave Systems and Devices (e.g., Radar, Radio Navigation), subclasses 357.01+ for directive radio wave systems including a satellite with position indicating.
- 701, Data Processing: Vehicles, Navigation, and Relative Location, subclasses 207 through 223 for navigation employing position determining equipment.
- 705, Data Processing: Financial, Business Practice, Management, or Cost/Price Determination, subclass 67 for secure transaction cryptographic processing (e.g., EFT / POS) including authentication.
- 713, Electrical Computers and Digital Processing Systems: Support, subclasses 155 through 159 for multiple computer communication using cryptography having central trusted authority providing computer authentication, subclass 161 for multiple computer communication using cryptography where packet header denotes cryptographically protected data and having data authentication, and subclasses 168-181 for multiple computer communication using cryptography having particular communication authentication technique.

- 726, Information Security, subclasses 1 through 36 for information security in computers or digital processing system.
- 259 Symmetric key cryptography:**  
This subclass is indented under 255. Subject matter wherein the encryption and decryption keys are the same.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:  
29, for a generic NBS/DES algorithm.  
42, for generic data stream/substitution enciphering.  
277, through 47 for cryptographic key management.
- 260 Symmetric key synchronization:**  
This subclass is indented under 259. Subject matter including transmission of a signal for generating identical transmitting and receiving keys in step relationship.
- 261 Including frame synchronization:**  
This subclass is indented under 260. Subject matter wherein the synchronizing signal is determined by the starting point of a discrete data block input to a receiver.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:  
212, for plural video stream multiplexing.  
274, for wireless communication with synchronization in general.
- 262 Transmitting a seed, sequence, or initial value:**  
This subclass is indented under 260. Subject matter wherein the synchronizing signal is a value indicating a starting point for key generation
- 263 Nonlinear or chaotic system:**  
This subclass is indented under 260. Subject matter wherein the key synchronization is used in a nondeterministic process.
- 264 Key derived from addressable memory element:**  
This subclass is indented under 259. Subject matter wherein the key is extracted from a static storage device having a specified location designation.
- 265 Combining outputs of shift register:**  
This subclass is indented under 259. Subject matter wherein the encryption or decryption includes summing the taps from individual stages of a shift register.
- SEE OR SEARCH CLASS:  
365, Static Information Storage and Retrieval, subclasses 80 through 90 for a magnetic shift register.  
377, Electrical Pulse Counters, Pulse Dividers or Shift Registers: Circuits and Systems, subclasses 64 through 81 for a shift register in general.
- 266 Including a modem:**  
This subclass is indented under 259. Subject matter including a device converting a digital signal to a signal suitable for telephone network transfer.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:  
257, through 41 for a cryptographically protected circuit switched network.
- 267 Correcting for random appearance of control character code:**  
This subclass is indented under 255. Subject matter wherein an undesired sequence representing a command signal within a body of data is compensated.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:  
51, for electric signal modification with printed copy production.
- 268 Pseudo-random sequence scrambling:**  
This subclass is indented under 255. Subject matter wherein modification of a digital data signal is affected to randomly distribute consecutive appearance of ones and zeros.
- 269 Having compression:**  
This subclass is indented under 255. Subject matter wherein the quantity of data representing a signal to be communicated is reduced.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:  
217, for video cryptography having compression.



## SEE OR SEARCH CLASS:

- 341, Coded Data Generation or Conversion, subclass 60 for digital to digital conversion to or from packed format.
- 704, Data Processing: Speech Signal Processing, Linguistics, Language Translation, and Audio Compression/Decompression, subclasses 503 and 504 for audio signal time compression or expansion.
- 708, Electrical Computers: Arithmetic Processing and Calculating, subclass 203 for compression/decompression by digital computer.

**270 Wireless communication:**

This subclass is indented under 255. Subject matter including cryptographic structure or methods which protect the transmission or reception of information over a nonphysical link by electromagnetic waves.

## SEE OR SEARCH CLASS:

- 359, Optical: Systems and Elements, subclasses 109 through 195 for optical communication.
- 370, Multiplex Communications, appropriate subclasses for multiplex communication system in general.
- 375, Pulse or Digital Communications, appropriate subclasses for wireless digital communication.
- 455, Telecommunications, appropriate subclasses for wireless telecommunication systems.

**271 Having receiver selection (e.g., pager):**

This subclass is indented under 270. Subject matter wherein communication is established between a transmitter and one of plural receivers.

## SEE OR SEARCH CLASS:

- 340, Communications: Electrical, subclasses 825.44 through 825.48 for selective code responsive device with indicator or alarm.
- 455, Telecommunications, subclasses 31.1 38.5 for system with receiver selection.

**272 Including hand-off based cryptographic alteration:**

This subclass is indented under 270. Subject matter wherein cryptographic protection is extended or modified by a switch between serving base stations of a mobile receiver.

## SEE OR SEARCH THIS CLASS, SUBCLASS:

- 247, and 248-250 for cellular phone cryptographic authentication.

## SEE OR SEARCH CLASS:

- 370, Multiplex Communications, subclass 331 for multiplex communication system handoff.
- 455, Telecommunications, subclasses 436 through 444 for cellular handoff.

**273 Rekeying system:**

This subclass is indented under 270. Subject matter wherein a key previously used for communication is replaced.

**274 Synchronization:**

This subclass is indented under 270. Subject matter including a signal for placing the transmitter and receiver into a particular in step relationship.

**275 Speech scrambler detail:**

This subclass is indented under 255. Subject matter wherein a signal representative of speech is made unintelligible.

- (1) Note. The signal may either be analog or digital.

## SEE OR SEARCH THIS CLASS, SUBCLASS:

- 236, 237, and 238 for video cryptography having modified audio signal.
- 257+, through 41 for a cryptographically protected circuit switched network.

## SEE OR SEARCH CLASS:

- 704, Data Processing: Speech Signal Processing, Linguistics, Language Translation, and Audio Compression/Decompression, subclasses 200 through 278 for speech signal processing in general.

- 276 Including sampling:**  
This subclass is indented under 275. Subject matter wherein a sequence of signal representations are obtained at discrete time intervals.
- SEE OR SEARCH CLASS:  
341, Coded Data Generation or Conversion, subclasses 122 through 125 for sample and hold circuits.  
700, Data Processing: Generic Control Systems or Specific Applications, subclass 94 for digital audio signal processing not elsewhere provided for.
- 277 KEY MANAGEMENT:**  
Subject matter providing supervision or control of a signal necessary for encryption or decryption.
- SEE OR SEARCH THIS CLASS, SUBCLASS:  
259, through 266 for a communication system using symmetric key cryptography.
- SEE OR SEARCH CLASS:  
705, Data Processing: Financial, Business Practice, Management, or Cost/Price Determination, subclass 71 for secure transactions including key management.  
713, Electrical Computers and Digital Processing Systems: Support, subclass 171 for multiple computer communication authentication having key exchange.  
726, Information Security, subclasses 1 through 36 for information security in computers or digital processing system.
- 278 Key distribution:**  
This subclass is indented under 277. Subject matter wherein the manner of sending or receiving the cryptographic key is detailed.
- 279 Key distribution center:**  
This subclass is indented under 278. Subject matter wherein distribution of a key is from a single source to plural distributed stations.
- 280 Control vector or tag:**  
This subclass is indented under 279. Subject matter wherein a key has associated data that limits key use.
- 281 Using master key (e.g., key-encrypting-key)**  
This subclass is indented under 279. Subject matter wherein a distributed short term key is protected by a separate private long term key.
- 282 By public key method:**  
This subclass is indented under 279. Subject matter wherein a distributed key is protected by a public key algorithm.
- 283 User-to-user key distributed over data link (i.e., no center):**  
This subclass is indented under 278. Subject matter wherein a key is directly distributed between users over the same channel as the data.
- 284 Using master key (e.g., key-encrypting-key):**  
This subclass is indented under 283. Subject matter wherein a distributed short term key is protected by a separate private long term key.
- 285 By public key method:**  
This subclass is indented under 283. Subject matter wherein a distributed key is protected by a public key algorithm.
- 286 Key escrow or recovery:**  
This subclass is indented under 277. Subject matter wherein the key is deposited or retrieved to or from a third party.
- 287 ELECTRIC SIGNAL MODIFICATION:**  
Subject matter which makes an information signal unintelligible by varying a parameter of the signal.
- SEE OR SEARCH THIS CLASS, SUBCLASS:  
210, and 211-242 for video electric signal modification.  
252, 253, and 254 for information signal encryption by masking with a second signal.  
255+, and 256-276 for a cryptographically protected communication system.

## FOREIGN ART COLLECTIONS

Parenthetical references in the titles below refer to the U.S. classifications from which these art collections are derived.

**FOR 103 STORED INFORMATION ACCESS OR COPY PREVENTION (380/3):**

Foreign art collection under the class definition which conceals or prevents rerecording of machine readable information by making the stored information unintelligible.

**FOR 104 Digital data (e.g., software program protection, data encryption) (380/4):**

Foreign art collection under collection 103 which prevents duplication of, or unauthorized access to, information stored as a group of discrete pulses.

**FOR 105 Video (380/5):**

Foreign art collection under collection 103 for preventing rerecording of, or unauthorized access to, a stored picture signal representative of an object or image.

**FOR 106 ELECTRIC SIGNAL MASKING (380/6):**

Foreign art collection under the class definition wherein the characteristics of an information bearing electric signal are obscured by the addition of an extraneous interfering signal.

**FOR 107 Video (380/7):**

Foreign art collection under collection 106 for masking a picture signal representative of an object or image.

**FOR 108 By signal having discrete step amplitude variation (380/8):**

Foreign art collection under collection 106 wherein the amplitude of the masking signal varies in discrete steps.

**FOR 109 ELECTRIC SIGNAL MODIFICATION (E.G., SCRAMBLING) (380/9):**

Foreign art collection under the class definition which makes an information signal unintelligible by varying a parameter of the information signal.

**FOR 110 Video (380/10):**

Foreign art collection under collection 109 for modifying either (a) a picture signal rep-

resentative of an object or image, or (b) a signal transmitted with such a picture signal (e.g., audio).

**FOR 111 Variable time delay modulation of base-band video signal (380/11):**

Foreign art collection under collection 110 which encrypts a picture signal before carrier modulation by application of varying amounts of time delay.

**FOR 112 Carrier phase shift (380/12):**

Foreign art collection under collection 110 in which a picture signal modulated onto a carrier wave is modified by a phase change of the carrier.

**FOR 113 Carrier frequency conversion (380/13):**

Foreign art collection under collection 110 in which the frequency of a carrier wave is modified for encryption.

**FOR 114 Nonstandard scan of video information (380/14):**

Foreign art collection under collection 110 which encrypts the video signal by use of nonstandard scan components.

**FOR 115 By modifying synchronizing signal (380/15):**

Foreign art collection under collection 110 which encrypts the synchronizing portion of the video signal.

**FOR 116 Record or coin controlled (380/16):**

Foreign art collection under collection 110 wherein video signal modification is actuated by an object authorizing or making payment for use of the equipment.

**FOR 117 Phase inversion of scan line information (380/17):**

Foreign art collection under collection 110 which inverts the phase of selected video scan line information signals.

**FOR 118 Facsimile (380/18):**

Foreign art collection under collection 110 which transmits or reproduces an optically scanned static picture represented by an electrical signal.

**FOR 119 Encrypting of accompanying audio signal (380/19):**

Foreign art collection under collection 110 which modifies an audio signal so as to render the sound unintelligible in a conventional receiver.

**FOR 120 Control coding (380/20):**

Foreign art collection under collection 110 which transmits an auxiliary signal between the transmitter and receiver for actuation or modification of an encrypting or decrypting function.

**FOR 121 Having transmission or distribution of key signal (380/21):**

Foreign art collection under collection 109 wherein a sequence of signals necessary for decoding of an encrypted signal is transmitted over a data link.

**FOR 148 With particular synchronization or initiation (380/48):**

Foreign art collection under collection 109 which uses a particular signal or circuit for control of timing relationships between a transmitting encrypting device and a receiving decrypting device.

**FOR 149 With digital signal handling (e.g., digital control, digital computer communication) (380/49):**

Foreign art collection under collection 109 in which an encrypting or decrypting device utilizes a digital signal manipulation technique on the information signal.

**FOR 150 Including shift register or memory (380/50):**

Foreign art collection under collection 149 which uses digital information storage equipment for encryption or decryption of the information signal.

END