

This heading is in four Parts:

- PART A: Cathode ray tube operating circuits &c
- PART B: Image signal synthesis
- PART C: Image signal manipulation
- PART D: Character image signal synthesis &c

Explanation of heading subject matter and relationship with other headings

PART A: Cathode ray tube operating circuits &c

This is the general place for operating circuits for cathode ray tubes and similar particle beam devices. Included here are circuits peculiar to particular kinds of tubes in addition to circuits relevant to the operation of cathode ray tubes in general

This Part also takes:

- . protective and alarm arrangements for indicating abnormal conditions of cathode ray tube circuits and for preventing damage to tubes
- . accessories and fittings (*including* mountings and holders) for cathode ray tubes

This Part is a residual place for applications of cathode ray tubes

Excluded are:

- . constructions of manually-controlled input devices—
- . . joysticks and mice—F2Y, Personally-actuated command apparatus
- . . touch sensitive screens—such headings as G1A, Radiation and radiation utilising measurement &c; G1N, Electrophysical and electrochemical measurement &c; G4H, Electric selective signalling
- . arrangements in which voltages and currents corresponding to a controlling variable are derived for deflecting the cathode-ray beam in accordance with the variable—G1N, Electrophysical and electrochemical measurement &c; G1U, Measuring or testing electric or magnetic variables; G4G, Electric analogue calculating; optical signal processing
- . automatic control systems not specially adapted for operating CRTs and employing devices sensitive to variations in the operating conditions of the tube and neutralizing such variations electrically—G3U, Automatic control of electric variables
- . accessories and operating circuits peculiar to particular applications—*headings for applications, eg* G4A, Electric digital data processing; H4D, Wave-energy position finding &c; H4F, Pictorial communication
- . methods of operating tubes involving improvements in electron-optical and discharge characteristics, *including* methods of obtaining desired discharge and electron-optical characteristics by the selection of particular operating values of electrode potentials or current density—H1D, Electric discharge tubes &c
- . constructions of cathode-ray tubes and external electrodes and coils for deflecting and focusing—H1D, Electric discharge tubes &c
- . mountings and holders attached to or not readily detachable from the tube—H1D, Electric discharge tubes &c; H2E, Electric couplings &c
- . converter circuits connected to time base circuits and producing a d.c. output—H2F, Electric converting systems
- . circuits for linearisation of sawtooth and other non-sinusoidal waveforms—H3P, Pulse, logic and switching circuits
- . circuits for producing sawtooth and other non-sinusoidal waveforms—H3P, Pulse, logic and switching circuits

PART B: Image signal synthesis

This Part is concerned with the synthesis, within a system, of image-representative signals for display on a scanned cathode ray tube or unspecified scanned displays. Also included here are systems comprising means to effect such synthesis and display in association with other kinds of apparatus

Excluded are:

- . synthesis from coded character of indicia data—PART D
- . other exclusions—*See* list of common exclusions *below*

PART C: Image signal manipulation

This Part is concerned with the manipulation of image signals synthesised by means classifiable in Part B, for displays of the kind specified in Part B, to change the displayed image (*eg* to create movement in images or to form composite images)

Note: *See* list of common exclusions *below*

PART D: Character image signal synthesis &c

This Part is concerned with the synthesis of signals, peculiar to characters or indicia represented by digital codes, for displays of the kinds specified in Part B.

Note 1: A collection of disclosures relating to means for character image signal synthesis in word processors, or where the display is not clearly a cathode ray tube display, is classified in heading G4H, Electric selective signalling

Note 2: *See* list of common exclusions *below*

Common exclusions

- . signal processing peculiar to magnetic resonance imaging system eg body scanners—G1N Electrophysical and electrochemical measurement &c (See Part G)
- . signal synthesis and manipulation means peculiar to particular applications - headings for such applications eg G4A, Electric digital data processing, H4D, Wave-energy position finding &c, H4F, Pictorial communication
- . circuits for storing and manipulating image signals where the interest resides in control of a memory—G4A, Electric digital data processing
- . systems for controlling display devices *other than* cathode ray tubes and using electric digital techniques—G4H, Electric selective signalling
- . systems for the display of alpha-numeric or like visually recognisable characters upon the screen of a cathode-ray tube involving the selection of one or more character-shaped apertures contained in a mask located within the tube—G4H, Electric selective signalling
- . local circuits for displays other than cathode ray tubes—G5C, Signs, indicators, displays and advertising &c, Part A
- . systems involving the generation of picture-forming electrical signals by point-by-point analysis of an original—H4F, Pictorial communication

The exclusion references listed in this heading are not exhaustive. Reference should be made to the appropriate general heading/s for processes, materials, elements or devices which may be more widely applicable than can appropriately be classified in this heading

Relationship with the Universal Indexing Schedules (heading U1S)

U1S is used, subject to its indexing rules, to record uses and applications of inventions classified here, except that terms are not assigned for references to television, this being regarded as a commonplace application.

Operative date for Key entries

The operative dates of the terms in this heading are:

1. for terms annotated by a marginal code, that of the Edition corresponding to the code
2. for other terms, that of Edition I

PART A: Cathode ray tube operating circuits &cClassifying Schedule

*Terms from the Common Indexing Schedule are applicable with the following classifying terms*

- operating circuits for cathode ray tubes and similar particle beam devices—
- k TABL . providing single and double (*ie* raster) linear time base
- k TABD . line synchronously-switched vertical deflection systems
- k TABE . stabilising raster against the effects of supply voltage variation (against effects caused by operation of raster correction circuits—*See* terms below for particular correction)
- TABF . providing functions associated with linear time base not provided for by terms TABL-TABE *above*  
 . . converter circuits connected to time base circuits and producing a d.c. output—*See* heading H2F, Electric converting systems
- TABX . providing non-linear time bases (*eg* polar)
- TACC . correcting multi-electrode convergence  
 . correcting distortion in time base or raster—  
 . . linearisation of sawtooth and other non-sinusoidal waveforms—*See* headings H3P, Pulse, logic and switching circuits
- k TACE . . correcting S-distortion
- k TACK . . correcting trapezoidal (keystone) distortion
- k TACP . . correcting pincushion or barrel distortion
- k TACR . . other (*including* combinations of TACE-TACP)
- TACF . centering  
 . compensating for the effects of electromagnetic or electrostatic fields—
- k TACA . . modifying ambient fields
- k TACG . . degaussing
- k TACT . . modifying fields produced during the operation of the tube, *including* preventing or reducing leakage
- TACU . . other (*including* combinations of TACA-TACT)
- TADB . biassing
- TADD . d.c. supply  
 . . d.c. supply circuits associated with linear time bases—*See* term TABF *above*
- TADF . focusing *including* dynamic focusing
- TADL . beam current limiting
- TADP . penetron voltage switching
- TAMC . modulating beam intensity directly by the signal
- TAMX . modulating and calibrating (*eg* by deflection) not provided for by term TAMC *above*
- TASA . for control of stroke writing displays
- TADX . other
- operating circuits *not provided for above* or elsewhere and peculiar to particular kinds of tubes—
- TATS . storage tubes and image-intensifier tubes
- TATV . pick-up tubes
- TATX . other tubes, *including* electron microscopes, particle beam lithography systems
- accessories and fittings for tubes—
- TAFA . devices for mounting in front of a display screen
- TAFE . tube mountings and holders
- TAFX . other
- TAPA . protective and alarm arrangements for indicating abnormal conditions of cathode ray tube circuits and for preventing damage to tubes  
 . beam current limiting—*See* term TADL *above*
- TAXA . applications of cathode ray tubes  
 . Note: H4T is a residual heading for subject matter classifiable under term TAXA. Classification is effected in other headings, and not in H4T, whenever possible
- TAXX . other subjects

PART B: Image signal synthesisClassifying Schedule

*Terms from the Common Indexing Schedule are applicable with the following classifying terms*

associations of image signal synthesis means, scanned cathode ray or unspecified scanned display means, and other means—

- |   |      |  |
|---|------|--|
| b | TBAA | . for photoexposure  |
|   | TBAD | . for image signal storage   |
|   | TBAG | . for generating and playing games   |
|   | TBAS | . for generating stereoscopic displays   |
| b | TBAX | . for other purposes   |
|   |      | synthesising image signals to control a scanned display—   |
|   |      | . raster scanned displays—   |
|   | TBBA | . . signals synthesised from data in 3-D coordinate form   |
|   | TBBD | . . signals synthesised from data in vector form   |
|   | TBBG | . . using a manually operated input device   |
|   | TBBK | . . for colour displays  |
|   | TBBN | . . for image comprising both characters and graphics  |
|   | TBBX | . . other  |
|   | TBCX | . other scanned displays   |
|   |      | synthesis involving particular operations on image signals—  |
|   | TBEA | . varying colour and brightness within an image ( <i>eg</i> shading, rounding, reducing jitter)                            |
|   | TBEC | . using, storing, recording or transmitting additional data for modification of the image ( <i>eg</i> relating to texture) |
|   | TBEE | . modifying the signal to reduce its bandwidth or reduce its storage requirements  |
|   | TBEX | . other  |
|   |      | arrangements for identifying a part of the displayed image—  |
|   | TBLA | . to call up different images ( <i>eg</i> menus)   |
|   | TBLC | . using an electronically generated cursor   |
|   | TBLM | . using a manually operated device interacting with the display screen   |
|   | TBLX | . other  |
|   | TBMA | arrangements for fault detection and display protection  |

PART C: Image signal manipulationClassifying Schedule

*Terms from the Common Indexing Schedule are applicable with the following classifying terms*

manipulation of image signals to provide a transformation of the image—

- |  |      |   |
|--|------|---|
|  | TCGA | . spatial translation of the whole image ( <i>eg</i> panning, scrolling)                            |
|  | TCGD | . spatial translation of a part of the image within the whole                                       |
|  | TCGG | . rotation of the image or a part thereof   |
|  | TCGK | . alteration in the size of the image or a part thereof   |
|  | TCGX | . other <i>including</i> combinations of the transformations classified by terms TCGA to TCGK above |
|  |      | combining image signals to generate composite images—   |
|  | TCHA | . within predetermined windows  |
|  | TCHD | . dependent on range, depth or priority information—  |
|  |      | . . 3-D to 2-D converters— <i>See</i> term TBBA <i>above</i>  |
|  | TCHX | . other <i>including</i> combinations of subjects classified by terms TCHA and TCHD <i>above</i>    |
|  | TCJA | manipulation of image signals to both combine and transform images                                  |
|  | TCXX | other image signal manipulation subjects  |

PART D: Character image signal synthesis &cClassifying Schedule

*Terms from the Common Indexing Schedule are applicable with the following classifying terms*

TDAA	arrangements concerned with coding, decoding and transmitting digitally coded data
TDCA	arrangements for generating image signals representative of individual characters—
TDCD	. built up from a dot matrix
TDCX	. built up from boundary or vector information
TDDA	. otherwise built up
TDEA	arrangements for generating image signals representative of a plurality of characters
TDFA	arrangements for operating on the image signal to perfect the displayed characters ( <i>eg</i> rounding)
TDGA	arrangements peculiar to character displays for transforming the image
TDHA	arrangements peculiar to character displays for generating composite images
TDXX	arrangements for changing the size, spacing or orientation of displayed characters
	other arrangements

Common Indexing Schedule

This schedule provides indexing terms of general applicability which are assigned as appropriate to disclosures classified in Parts A to D

	the display being used—
T100	. for playing games
T101	. for photoexposure
	. in vehicles or vehicle simulators—
T102	. . air- or space-craft
T103	. . marine craft
T104	. . land vehicles
T105	. . other ( <i>including</i> unspecified)
T109	. for other purposes
	nature of display—
T110	. spiral scan
T111	. other non-raster scan
T112	. stroke-writing display
T113	. liquid crystal array
T114	. LED array
T115	. gas plasma panel
T119	. other
	features of the displayed image—
T120	. including colour
T121	. including characters
	. including composited images—
T122	. . within predetermined windows
T123	. . dependent on range, depth or priority information
T124	. . other
	. including transformation from a previous image—
T125	. . spatial translation of the whole image ( <i>eg</i> panning, scrolling)
T126	. . spatial translation of a part of the image within the whole
T127	. . rotation of the image or a part thereof
T128	. . alteration in the size of the image or a part thereof
T129	. . other
T130	. including a movable cursor
T131	. enabling stereoscopic or 3-D viewing
T139	. other
	apparatus for identifying a part of the display—
T140	. light pen
T141	. touch sensitive screen
T142	. joystick
T143	. mouse
T144	. stylus and writing tablet
T149	. other
	identifying a part of the display—
T150	. to change the displayed image
T151	. to control other apparatus
T160	processing the image signal to control its bandwidth or bit-rate or to reduce redundancy