

# Index

## -A-

- ABC (Automatic Beam Circuit), 174–177
- ABO (Automatic Beam Optimizer), 174–177
- AGC (Automatic Gain Control) circuits 64, 127, 365:
  - luminance/chroma mix and, 130, 134–136
  - PK-755 AGC circuit, 68–69
  - PK-956 processor circuit and, 70
  - tri-electrode vidicon and, 78, 80
  - trinicon and, 80
- AIC (Automatic Iris Control) circuits, 138–140, 151, 361
- Akai VCX-2, 69, 113, 115, 118, 120, 127, 134–136, 194–195
- ALC (Automatic Light Control), 67
- AM detectors, 101
- Aperture(s), 15:
  - control, 17
  - correction, 60
  - horizontal aperture correction, 70
  - vertical aperture correction, 96–97
- ASC (Automatic Sensitivity Control), 57, 76, 78, 80, 378
- Audio portion of cameras, 205–207
- Auto-focus:
  - edge video, 245, 247–248
  - infrared, 238, 240
  - optical, 236–237
  - problems with, 249–251
  - ultrasonic, 240–244
  - zoom lens, 14, 17–18
- Auto-iris lens, 14
- Auto white balance, 390–392
- Auto white set, 101, 113, 116–120
- Auto zoom, 17
- Auxiliary circuit alignment, 393

## -B-

- Back focus, 16, 339, 341
- Back-lighting, 16–17

- Bandpass filter, 66, 103
- Beam, 26–27, 328
- Bench setups, 279, 281
- Bias light arrangement, 59, 327–328
- Black gate pulse (BGP), 57, 58
- Black level gate, 73
- Black level stabilizer, 73, 76
- Black offset, 57
- Blanking circuits, 59, 107, 127;
  - dark shading and, 167–170
  - HD, 76, 78
  - problems with, 82, 177–178
- Buffer amplifier, 64
- Burst reversal circuit, 123–124
- Burst/SSG mixer, 128–129

## -C-

- Carrier balance adjustments, 371, 385
- Carrier leakage adjustments, 349
- Chip components, 283–284
- Chroma:
  - beat suppression circuit, 126–127
  - cancel, 111
  - gain and burst, 361–364, 376
  - index separator, 108, 110, 385–386
  - limiter adjustment, 375
- Chroma clip function, 59:
  - adjustment of, 361
  - high luminance, 124, 126
- Chroma encoding. *see* Encoder circuits
- Chroma process, 85, 87
  - color carrier separation, 87, 91, 120
  - color shading correction, 97, 99, 101
  - demodulation, 111, 113
  - detection and color balance, 101, 103
  - gamma/degamma correction, 97, 99
  - index inversion and, 110
  - luminance/chroma mix, 130, 134–136
  - matrixing, 103
  - problems with, 120, 306–310



Chroma process (*cont.*)  
pupil correction and, 110  
vertical edge correction, 91-94, 96  
Clamping circuits, 56-57, 82, 127  
Clipping, 59, 127  
C-mount lenses, 14  
Color(s):  
brightness of, 13, 14  
correction and detection of, 101, 103  
filters to correct temperatures of, 12  
how the eye sees, 9-11  
how to obtain different types of, 6  
hue of, 13  
saturation of, 13, 14  
separation, 350-351  
variation in color temperatures, 11-12  
visible spectrum, 4-5  
white light and, 5-9  
Color ghosting, 120  
Color phase, 367-371  
Color shading correction, 97, 99, 101  
Color temperature meter, 258  
Comb filters, 105  
Continuous-automatic white set, 118-120

-D-

Dark current:  
compensation, 57-59  
in newvicons, 28  
in saticons, 32  
in vidicons, 26  
Dark shading, 167-170  
DC balance, 371, 373  
Deflection circuits, 3-4, 153:  
EVFs and, 212-213  
function of, 154  
horizontal, 154-160, 212-213  
problems with, 177  
vertical, 160-164, 212  
Degamma correction, 61, 63-64:  
gamma/, 97, 99  
Delay lines, 120  
Demodulation, 111, 113  
Detector and balance adjustments, 371  
Diddle sticks, 282-283  
Diffusion filters, 2, 116, 117  
Digital voltmeter, 255  
Dynamic focus, 170-172, 178, 339

-E-

Edge video auto-focus, 245, 247-248  
Encoder circuits:  
alignment of, 355-356  
chroma and NTSC, 122-124, 126-129

Encoder circuits (*cont.*)  
chroma encoding, 123-124  
function of the, 122-123  
problems with, 151-152  
RCA SCFM chroma, 129-130  
step energy vidicon, 130  
tri-electrode vidicon, 130  
trinicon, 130  
Encoder matrix, 117, 118  
EVF (Electronic Viewfinder), 208:  
alignment of, 393-395  
deflection and, 212-213  
indicators for, 218, 221-225, 227-228  
power supplies for, 210-211  
problems with, 228, 233  
sizes of, 210  
switching videos in, 214-216, 218  
video processing and, 213

-F-

Fade circuits, 192-197, 199, 202-203  
Fading, 136  
Feedback buffer circuit, 105  
FET VOM, 255  
Filters. *see* type of  
Focal length and point, 15-16  
Focus adjustment, 328-330  
Focus regulator circuits, 186  
Frequency counter, 255  
F-stops, 15

-G-

Gain control, 127  
Gamma:  
correction, 61  
/degamma correction, 97, 99  
and vidicons, 25, 27  
G setup and gamma, 373

-H-

High luminance chroma clip, 124, 126  
Hitachi Sales Corp. of America, 3, 29, 43, 94, 101, 142-145, 163-164, 196-197  
Horizontal aperture correction, 70  
Horizontal deflection, 154-160, 212-213

-I-

Illuminance, 274  
Image retention, 27, 28, 32  
Index electrode signal, 36-38, 108  
Index inversion, 110  
Index separator, chroma, 108, 110, 385-386  
Indicators, 218:  
iris level, 228  
light level, 221-223



-T-

Tape run indicators, 227  
Target control voltage circuitry, 174  
Target material:  
  in newvicons, 27, 28  
  in saticons, 30, 31  
  in trinicons, 34  
  in vidicons, 26  
Target setting, 326-327  
Test:  
  boxes, 266, 268-269  
  filters, 269-270  
  jigs and adapters, 270-272  
  patterns, 261-264  
  stands, 265-266  
Thermistors, 57, 174  
Tracking correction, 61, 63-64, 97, 356-359  
Tri-electrode vidicons:  
  alignment of, 377-380  
  chroma process and, 107  
  encoders and, 130  
  luminance signal processing circuits and, 76,  
    78, 80  
  preamplifiers in, 52, 54  
  signal processing circuitry in, 47  
  stripe filters in, 41-42  
Trinicons, 3, 32:  
  alignment of, 380-388, 390  
  chroma cancel of, 111  
  chroma index separator of, 108, 110  
  chroma process and, 108, 109-111, 113  
  construction of, 33  
  demodulation and, 111, 113  
  development of, 33  
  encoders and, 130  
  excessive temperatures and, 39  
  index electrode signal of, 36-38  
  index inversion and, 110  
  line crawl and, 108, 110  
  luminance signal processing circuits and, 80, 82  
  preamplifiers in, 54-55  
  pupil correction and, 110  
  signal processing circuitry in, 50  
  static deflection plates of, 34-35  
  storage of, 39  
  stripe filters in, 35-36  
  target material in, 34

-U-

UED (Upper Envelope Detector), 107  
Ultrasonic auto-focus, 240-244  
Underscan color monitor, 258-260

-V-

VCR control circuits, 192-197, 199, 202-203  
Vectorscope, 256

Vertical:

  aperture correction, 96-97  
  deflection, 160-164, 212  
  edge balance, 347, 349  
Vertical edge correction, 59-60:  
  chroma process and, 91-94, 96  
Vertical edge gain, 361  
Videos, switching of, 113, 115, 123-124,  
  214-216, 218  
Vidicons, 3:  
  beam and, 26-27  
  color signal generation and, 24-25  
  construction of, 19-20  
  dark current and, 26  
  face plate of, 21-22  
  gamma and, 25, 27  
  image retention and, 27  
  lagging and, 27  
  physical characteristics of, 25  
  service life of, 27  
  signal processing circuitry in, 45, 47  
  sticking and, 27  
  stripe filters in, 22-24  
  target material in, 26  
  target signal of, 24-25  
  target voltage of, 26  
  *see also* Step energy vidicons; Tri-electrode vi-  
    dicons

Viewfinders. *see* EVF (Electronic Viewfinder)

-W-

Wall charts, 276-278  
Waveform monitor, 256-257  
WHD (Wide Horizontal Drive), 67  
White balance, 116-120, 356-361, 373-374, 379,  
  386  
White set indicators, 223-225, 228  
Word indicators, 225  
WPLK (Wide blanking pulse), 67

-Y-

Y gain adjustment, 349-350  
YH and YL channel, 66

-Z-

Zoom lenses:  
  auto, 17  
  auto-focus, 14, 17-18  
  control circuits, 203-205  
  limitations of, 18  
  macro range, 205  
  problems with, 205  
  ranges of, 18  
  types of, 14

