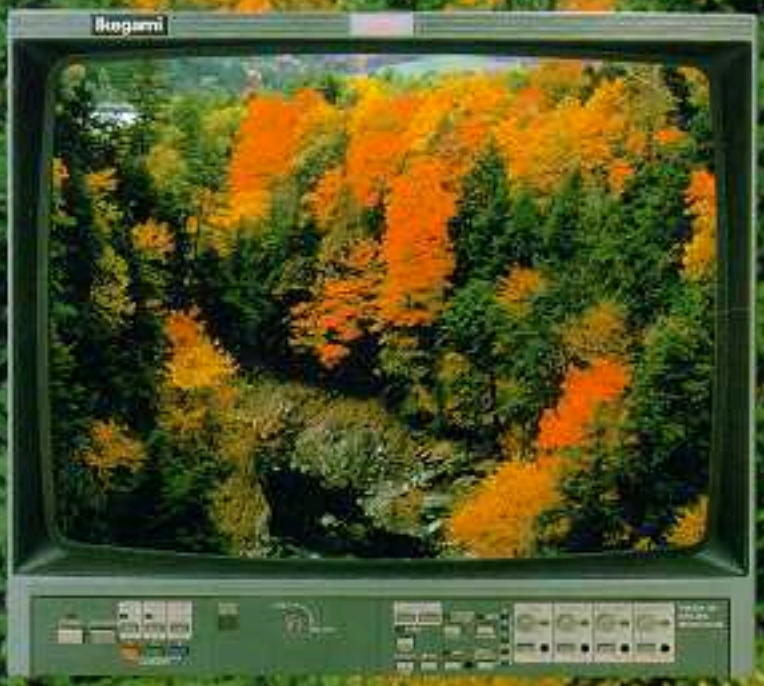
Ikegami



19-SERIES COLOR MONITORS

...Worth looking into

When you look into an Ikegami 19-Series Broadcast Color Monitor, you'll see the truest color reproduction imaginable... and more.

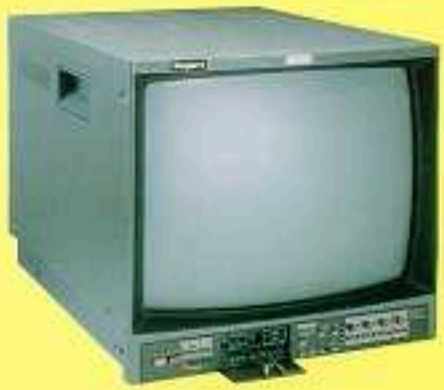
Look closely and you'll see the reasons why Ikegami has earned a reputation as the quality manufacturer of precision Broadcast Color Monitors, Cameras and other video products.

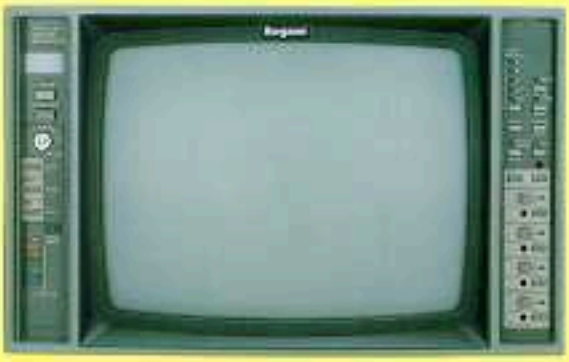
First, there's the commitment to unmatched performance—and second, there's the development and application of Ikegami's latest technology.

When you look into an Ikegami 19-Series Broadcast Color Monitor, you will see a picture that displays the input signal down to the finest detail. Here is a monitor that you can believe in: worthy of the great Ikegami name and tradition.

And that's just the beginning.

Look around, and you will see the Ikegami name on more and more monitors at the NAB, net-



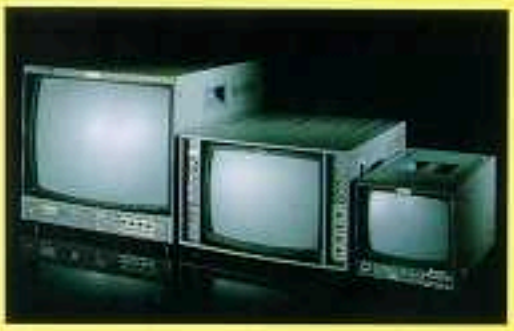


works and independent broadcast studios and other video facilities.

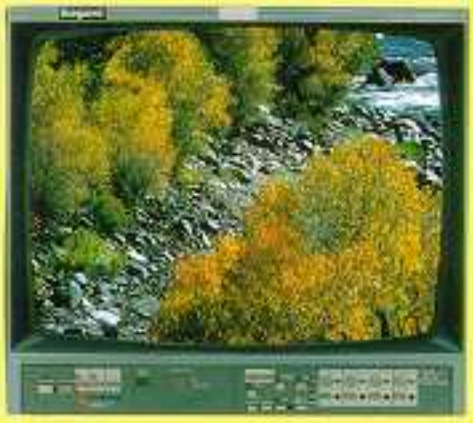
Fact is, an ever-increasing number of video broadcast equipment buyers are specifying Ikegami Broadcast Monitors.

Ikegami's full line of Broadcast Color and Monochrome Monitors is engineered to surpass anything you have seen, by offering unmatched stability, reliability, and outstanding features. Ikegami products provide the level of excellence that you've come to expect and continue to demand.

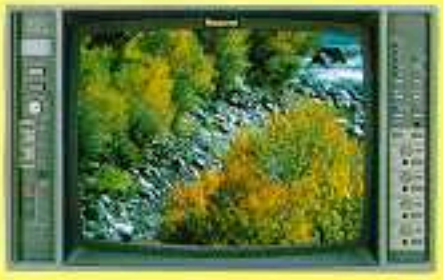
Ikegami 19-Series Monitors feature High Resolution Shadow Mask CRT's with Self-Converging In-Line Guns and American Standard Matched Phosphors. The 19-Series are available in 8.5V, 13V and 19V and are engineered to provide superb resolution, excellent stability, easy maintenance and low power consumption in a sleek, streamlined design.



Ikegami 19-Series High Resolution In-Line Gun Color Monitors



TM 20-19RH



TM 14-19RH

Designed to satisfy demanding professional broad-cast needs, the 19-Series High Resolution In-Line Gun Color Broadcast Monitors are yet another example of Ikegami's engineering achievements.

Cathode Ray Tube

- Fine Dot Pitch Shadow Mask results in high resolution
- In-Line Self Converging Electron Gun assures convergence stability
- Controlled Phosphors (to American Broadcast Standards) provide consistent and known colorimetry
- 6500°K color temperature

- Black Matrix surrounding color dots assures high contrast under bright ambient illumination
- 13V and 19V units available

Circuitry

- Beam Feedback System (BFS) assures long-term black level stability by detecting CRT cathode current
- Wide band R-Y, B-Y Precision Demodulation provides faithful reproduction of input signal colorimetry
- Comb Filter preserves input signal resolution, switchable to notch filter
- Keyed Back Porch Clamp prevents black level fluctuation, over 0-100% range of APL
- Automatic Frequency Phase Control (AFPC) assures extremely accurate color locking
- Color Killer automatically activated at burst levels below 5 IRE (This function is front panel switchable)
- Pre-set Operating Controls (Hue, Chroma, Brightness, Contrast) standardizes operation
- Variable Aperture Correction increases displayed picture sharpness
- Regulated High Voltage holds raster size constant within 0.5% over 0-100% range of APL
range of APL

Systems Conveniences

- 3 Video Inputs, 1 AUX input, with front panel selector switching
- Input Signal Connectors isolated from chassis for hum rejection
- Looping Video Inputs compensated for 75 ohm distribution system
- Synchronization to composite input signal (internal) or separate sync (external), front panel controlled
- Bridging BNC Connectors for video and sync inputs
- 3 Selectable Horizontal Time Constants
- Tally Light, internal or external power
- Remote operation of Video Input Selector (A/B/C), Sync Mode (internal/external), Color Killer (color monochrome), Tally (on/off)
- Rack mount (with slides) or cabinet mount
- Signal and chassis ground can be separated from AC ground
- R/G/B Operation—in addition to encoded input (optional)

Test Facilities Provided

- Rotation control, to adjust purity when monitor position is rotated
- R-Y/B-Y Outputs available for use of X-Y display as vectorscope
- Pulse Delay for examination of horizontal and vertical blanking interval (with automatic delayed pulse brightness increase)
- Residual Sub-Carrier Test Circuit, for evaluation of input signal condition
- Underscan Switch to permit observation of picture corners
- Set-up Switch to disable vertical deflection for adjustment of low light white balance
- Individual Switches to disable R-G-B beams
- On demand Degauss Circuit Demagnetize Shadow Mask

RGB or Component Input (Optional)

- 19 Series monitors are available in RGB, and also available with Component.
- Monitors are switchable between Component and NTSC, or betwen RGB and NTSC. Monitor switching is accommodated through the rear remote connector, with an external control switch or front panel switch.

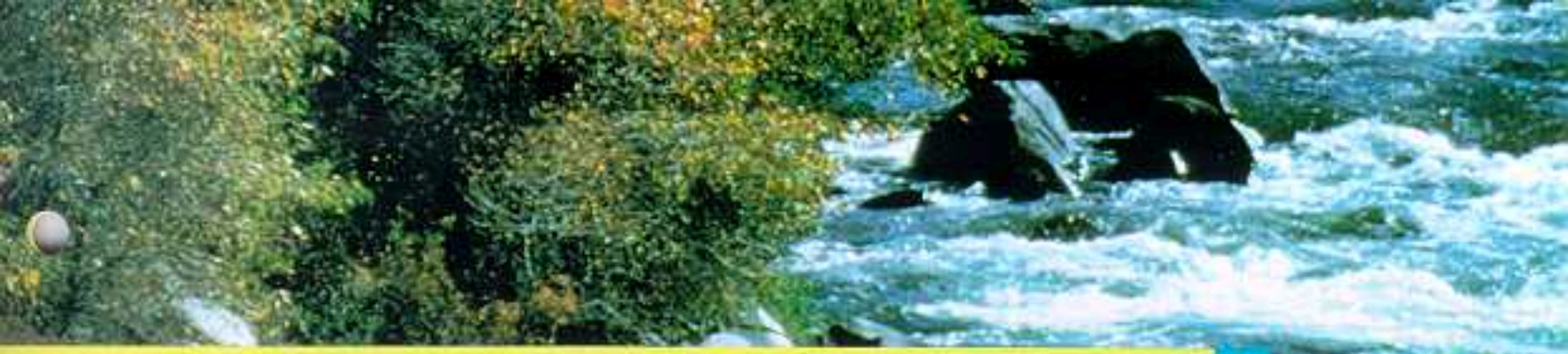
Ikegami 10-Inch High Resolution In-Line Gun Color Monitor

TM 10-19RH

The TM10-19RH portable professional color monitor complements Ikegami's broad range of 14-inch (13V) and 20-inch (19V) broadcast color monitors. Using a 10-inch (8.5V) high resolution shadow mask cathode ray tube with a self-converging in-line gun, the TM10-19RH can be operated from AC or DC Power. The DC version is available as an option. Units are available in cabinet or rack mount versions. The rack mount versions are 8-3/4-inch high and are furnished in single, dual, single with adjacent WFM space, or single with adjacent Vectorscope space configurations.

American Standard Matched Phosphors are utilized in NTSC versions of the TM10-19RH.

Standard Features include: pulse cross, keyed back porch clamp, pre-set contrast/chroma/brightness controls, on-demand degaussing, aperture correction, dual video inputs, sync mode selection, RGB input, color/monochrome selection, individual electron gun cut-off switches and remote control capability.



In-line gun CRT

- The CRT utilizes an in-line type electron gun, thereby eliminating the need for constant reconvergence adjustments. The convergence characteristics are extremely stable over a wide temperature range and long periods of time.

High-resolution CRT

- The display produces crisp, precise images because the monitors use a fine-pitch, dot-mask CRT. A black matrix effect is provided on the CRT screen, enabling pictures to be displayed with a high contrast ratio even under bright lights.

Power

- AC power over the range of 90 ~ 130 volts can be utilized. (Using optional DC power, the DC-DC converter accommodates input voltage levels over the range of 10 – 28 volts.)

Weight

- The portable version is furnished in a rugged cabinet with carrying handle; combined weight is under 21 pounds.

Size

- Overall depth of the TM10-19RH is under 16-inches; at 1/2 rack space width and 8-3/4-inch height. It rivals the size of many professional monochrome monitors.

Front panel controls

- The front panel of the TM10-19RH has the following control functions:
  - Power on/off
  - Degauss
  - Pulse cross
  - Color/Monochrome
  - Red gun on/off
  - Green gun on/off
  - Blue gun on/off
  - Aperture correction on/off
  - Video input A/B
  - Sync internal/external
  - Wide/U-Scan
  - R, G, B Background control
  - G, B Gain control
  - Operate/Setup
  - Hue control
  - Chroma control with pre-set position
  - Brightness control with pre-set position
  - Contrast control with pre-set position

Circuit features

- The TM10-19RH contains the following circuits:
  - Keyed back porch clamp
  - Power supply protective circuit
  - High voltage power supply protective circuit
  - Sweep failure detection circuit
  - Pulse cross circuit

Remote controls

- Video A/B, Video/RGB, Sync Internal/External and Color/Monochrome may be remotely controlled.

Specifications: 19-Series Color Monitors

1.0 Electrical

1.1 Input Voltage

1.1.1 Nominal Value: 100 ~ 120/200 ~ 240 VAC (automatic select), single phase

1.1.2 Tolerance: ± 10%

1.1.3 Frequency: 50/60 Hz

1.2 Input Power

Approximately 150 W at nominal line voltage

1.3 Input Signals

1.3.1 Video Inputs

1.3.1.1 Encoded NTSC

Composite (1.0 V p-p nominal) or Non-composite (0.7V p-p nominal), positive polarity, three (3) each

1.3.1.2 R/G/B (optional)

Composite (1.0Vp-p nominal) or Non-composite (0.7V p-p nominal), positive polarity, one (1) set

1.3.1.3 Component Input (optional)

Y: VS. 1.0V p-p positive polarity

V, 0.714V p-p positive polarity, setup 7.5%

R-Y: 0.7V p-p 75% for color bar signal

B-Y: 0.7V p-p 75% for color bar signal

1.3.1.4 Connection

Bridging BNC connectors, high impedance, isolated from chassis ground (for hum reduction)

1.3.1.5 Return Loss

40 dB (100 KHz ~ 4.2 MHz)

1.3.2 Composite Sync Input

1.3.2.1 EIA Standard RS-170

4V p-p ± 2V p-p nominal, negative polarity, one (1) each

1.3.2.2 Connection

Bridging BNC connectors, high impedance

1.3.2.3 Return Loss

40dB at 5 MHz

1.3.3 Remote Control

1.3.3.1 Functions

a) Video Input Selector (A/B/C/AUX)

b) Sync Mode (Internal/External)

c) Color Killer (Color/Monochrome)

d) Tally (On/Off)

1.3.3.2 Connection

Via 10 pin connector, type

1.4 Vertical Sweep Rate

Nominal 59.94 Hz

1.5 Horizontal Sweep Rate

Nominal 15.7342 KHz

1.6 Scanning

525 lines/frame

60 fields/second

30 frames/second

2:1 interlace

1.7 Display Device

1.7.1 Type

In-line gun, shadow mask, high resolution CRT

1.7.2 Size

TM14-19RH: 13V

TM20-19RH: 19V

1.7.3 Dot Trio Pitch

TM14-19RH: 0.31mm

TM20-19RH: 0.43mm

1.7.4 Chromaticity

1.7.4.1 Coordinates

	X	Y
Red	0.630	0.340
Green	0.310	0.595
Blue	0.155	0.070

1.7.4.2 Tolerance

±0.005

1.7.5 Brightness

50 ft-L at −6dB input

1.7.6 Resolution

TM14-19RH: 700TV lines (at Center)

TM20-19RH: 700TV lines (at Center)

1.8 Video Signal System

1.8.1 Frequency Response (measured with Aperture Gain 0, 3.58 MHz notch filter removed):

60 Hz ~ 10MHz: flat within ±1 dB referred to 100 KHz

1.8.2 Pulse Response (at each R/G/B amplifier output with 0.05 μsec. rise time square wave video input):

Rise Time ≤ 0.1 μsec. with 250 KHz square wave

Overshoot ≤ 10% with 250 KHz square wave

Sag ≤ 1% with 60 Hz square wave

1.8.3 Chrominance Rejection Ratio (measured with Aperture OFF, 3.58 MHz notch filter ON)

Less than −30dB at color bar signal

1.8.4 Aperture Correction

1.8.4.1 Correction Characteristics

Waveform of overshoot of 2T pulse appears symmetrically with 3.58 MHz notch filter ON

1.8.4.2 Frequency Response (referred to 100 KHz)

60 Hz ~ 100 KHz ± 1 dB

1 MHz + 2 dB

2.5 MHz + 6 dB

3.58 MHz − 15 dB

1.8.5 Linearity

Differential Gain <3% from video input terminal to each R/G/B output terminal

1.8.6 Black Level Stability

Black Level varies ≤ 1% when APL is changed from 10% to 90%

1.8.7 Noise (measured at each R/G/B channel in active scan period)

Coherent Noise	−46 dB
Hum Noise	−55 dB
Other	−55 dB

1.9 Color Signal System

1.9.1 Chroma Signal Frequency Response (measured at chroma output test point when video sweep signal of 1.0 Vp-p composite is supplied at video input, with 3.58 MHz reference):

2.3 MHz ~ 4.9 MHz ±1 dB

1.9.2 Frequency Response (measured at R-Y, B-Y check test point when video sweep signal of 1.0V p-p composite is supplied at video input, with 100 KHz reference):

1.9.2.1 R-Y, B-Y

60 Hz ~ 0.6 MHz ± 0.5 dB

1.3 MHz −6 dB

3.6 MHz −20 dB

1.9.2.2 Pulse Distortion (measured at R-Y, B-Y test point when 15 KHz square wave signal of 1.0V p-p composite is supplied at video input)

	Overshoot	Sag
R-Y	5%	3%
B-Y	5%	3%

1.9.3 Frequency Range of 3.58 MHz Sub-carrier Oscillator Circuit 3.579545 MHz ± 200 Hz

1.9.4 Phase Error

Less than 2° for each of the following individual conditions

a) Burst frequency ± 10 Hz

b) Burst level change +6, −12 dB

c) When 25 mV (−28 dB) white noise appears on the video signal

d) When the ambient temperature changes by 10°C