

Xintekvideo INC.

PICTURE QUALITY RESTORER MODEL HQ 2000



DESCRIPTION:

Xintekvideo's Picture Quality Restorer Model HQ2000 is a state of the art signal processing system that essentially removes all electrical and ignition-type noise from NTSC color television signals. In addition it significantly reduces random noise and other interference. It is particularly effective in reducing satellite of FM link threshold noise that normally appears as "sparkles" or streaks as well thermal noise. It is, in effect, a means of extending threshold in FM links. The Model HQ^{ES} is also particularly useful for cleaning up off the air signals from distant TV stations.

Aside from the standard analog-to-digital and digital-to-analog conversion operations, the system signal processing is all digital. Every video pixels is analyzed and a differentiation is made based on the statistical characteristics of unwanted noise and errors. Sophisticated circuits are used to analyze the video signal and search for impulse noise using multidimensional correlation techniques. To differentiate between impulse noise and moving video details, motion is also detected using a number of video frames for temporal correlation detection. When the circuits determine that a particular video pixel has noise perturbation or is in error, and the motion circuits determine that there is no motion in the vicinity of the error, that pixel is replaced with a value predicted from spatio-temporal neighboring pixels. All processing is performed on the composite color signal thus avoiding color decoding and re-encoding impairments.

Additional circuits in the Model HQ2000 provide random noise reduction of up to 9 dB. Noise reduction is achieved using adaptive motion compensated recursive filtering techniques

which have been perfected by Intelvideo over the course of the last 15 years. Noise reduction threshold can be adjusted manually for unusual noise conditions, or controlled automatically for hands-off operation.

The unit is fully self contained. It takes a baseband 1v pp NTSC color video signal and it outputs the same level processed signal. Hardwired bypass occurs in the event of power loss.

SPECIFICATIONS:

Input: NTSC color video signal, 1v pp into 75 Ohms
Return Loss >40dB

Output: NTSC color video signal, 1v pp into 75 Ohms
Return Loss >35dB

Frequency Response: +/- 0.5dB to 4.2MHz

Non Linearity: <2%

Differential Phase: <1° plus quantizing effects

Differential Gain: <1% plus quantizing effects

K Factor with 2T pulse: Better than 1%

System Delay: 1 TV Field nominal

Power Requirement: 120v AC, 60 Hz, 15 Watts

Operating Temperature: 32° F to 110° F, ambient

Humidity: 10% to 90% non-condensing

Mechanical: 1RU cabinet: 1.75"H, 19"W, 10"L; 7Lbs

Specifications subject to change without notice. 3/2002

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