

For Immediate Release:

September 29, 2006

**JVC Develops First Consumer Full HD 3-CCD Camera System
Featuring 16:9 Progressive Scan CCDs**
Broadcast HD Camera Fujinon Lens Also for First Time in Consumer Camcorder

JVC developed the first consumer full High-Definition 3-CCD camera system capable of producing full HD images (1920 x 1080i). The camcorder also features a Fujinon lens used in broadcast video cameras, now being used in a consumer camcorder for the first time. The 3-CCD system offers superior color reproduction. According to JVC this camera system technology is being used for the first time in a consumer camcorder, as of September 29, 2006.

Amidst rapidly rising market needs for full HD equipment, JVC borrowed from its other high-quality, high-resolution image technologies for camcorders developed over many years to develop this system, including its progressive CCD camera system, 3-CCD camera system, super high-end processor, and Megabrid high-resolution signal processing engine.

JVC will display a prototype HD Hard Disk Camcorder featuring this system at CEATEC Japan 2006 to be held at the Japan Convention Center at Makuhari Messe from Tuesday, October 3.

1. Full HD Images (1920 x 1080i) Created by 16:9 Progressive Scan CCDs for First Time in Consumer Industry, as of September 29, 2006.

As of September 29, 2006, JVC developed the industry's first high-quality full HD 3-CCD camera system for use in a consumer camcorder. It uses three 1/5-inch 16:9 progressive scan CCDs designed for HD use in a diagonally offset pixel configuration, explained in the technical detail section later in this article.

Designed for HD use, the 1/5-inch 16:9 progressive scan CCD has large pixels measuring 3.28 microns x 3.28 microns, roughly twice the size of pixels in JVC 2-megapixel camcorders, for greater modulation transfer function (MTF) and sensitivity values. The CCD aspect ratio was tailored to 16:9 for HD use for the first time at JVC. The compact camera unit produces high-resolution images.

2. First Use of Broadcast HD Video Camera Fujinon Lens in Consumer Camcorder, as of September 29, 2006

The highly regarded Fujinon lens used in this system is also used in broadcast HD video cameras. Three aspherical lens elements provide the superior optical performance over the entire zoom range suitable for an HD system. The 3-CCD system has minimal drop off in F. No. because one of the aspherical lens elements is made of highly indexed glass. The resulting minimal F. No. is F1.8 wide open and F1.9 for telephoto, while keeping the lens unit small.

In addition, the lens surface is coated with a new EBC (Electronic Beam Coating) as used for broadcast HD lenses. In this process, vaporized chemical material is deposited onto the lens surface with an electronic beam inside a vacuum evaporation device. This coating greatly reduces degradation due to reflected light on the lens surface, leading to greater light transmission. This reduces detrimental flaring and ghosting as much as possible for black levels.

As in the highly received award winning Everio GZ-MG505 3-CCD hard disk camcorder, JVC adjusts the three CCDs precisely in the 3-CCD prism on each axis of a 6-axis color matrix before mounting them firmly in place with high precision appropriate for an HD camera.

Newly Developed Progressive Scan CCD Overview

Image size: 1/5" Diagonal
 Aspect ratio: 16:9
 Pixel size: 3.28 microns x 3.28 microns
 Total number of pixels per CCD: 1016 x 558, approximately 570,000 pixels
 Number of effective pixels per CCD: 976 x 548, approximately 530,000 pixels

JVC Uses Pixel Shift Technique

As shown in figure 1, the Red and Blue imaging CCDs are shifted a half-pixel both horizontally and vertically relative to the Green imaging CCD. Because the pixel-shift system uses progressive scan CCDs, signals are processed first as 1920 x 1080p progressive signals, then converted to 1920 x 1080i interlace signals for recording.

As a result, the system records a higher resolution HD image than the interline (IL) CCD system shown in figure 2.

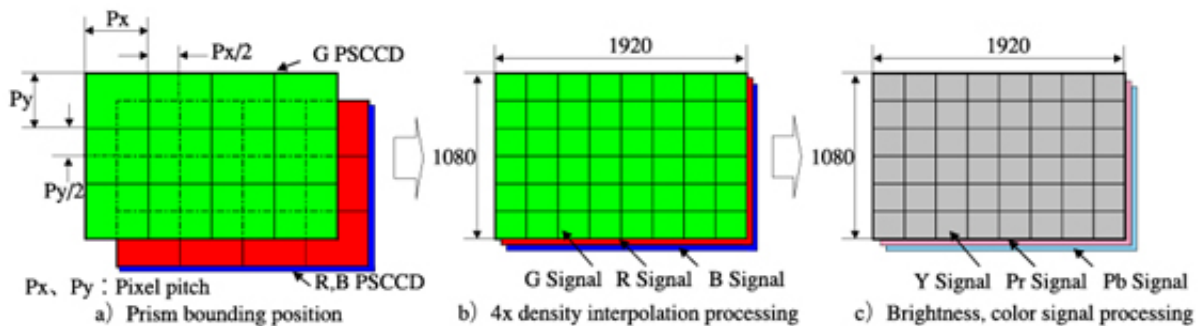


Figure 1: Pixel Shift Scheme Concept

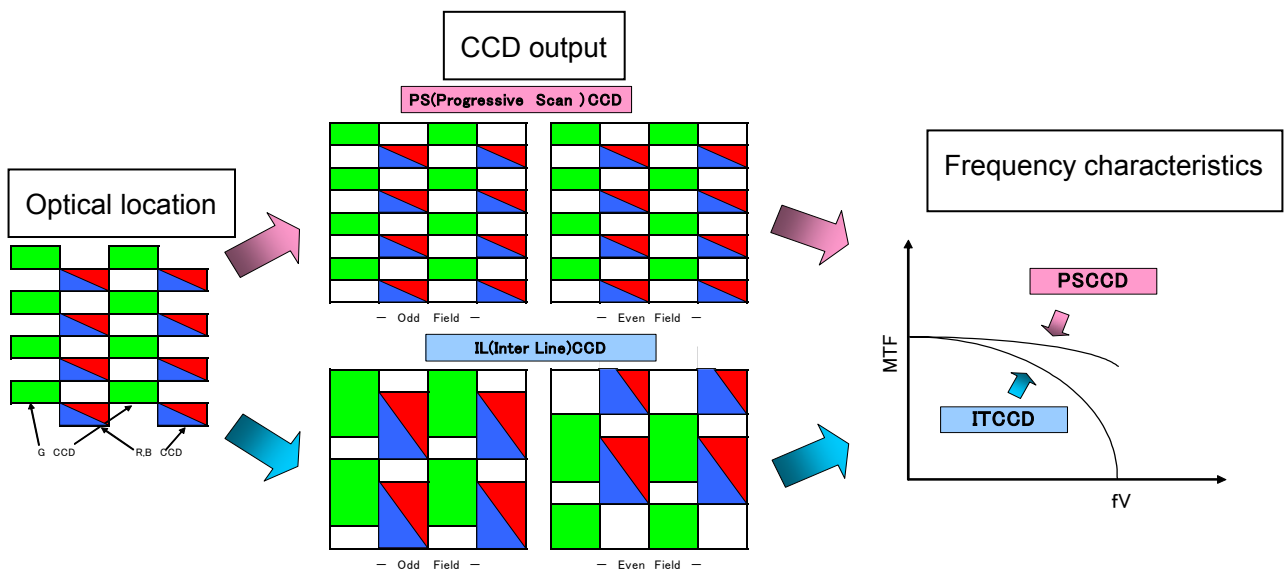


Figure 2: Frequency Characteristics

Pixel summary of recorded images

Total pixels: 2032 x 1116 (equivalent to 2.27 million pixels)
Number of effective pixels: 1952 x 1096 (equivalent to 2.14 million pixels)

The analog front end (AFD) uses 14-bit signal processing to produce HD high-quality resolution.

JVC developed a new HD-specific processing circuit to process high-density interpolation signals for brightness and color. The circuit separates low frequency and high frequency components of the brightness signal to create an image with exceptional color reproduction and less moiré.

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