

Description of Digital Device

EXHIBIT # : 4-1
FCC ID : ACJ927123K
OUR REF. : MKES99-F014
MODEL NO. : PV-DV950D

Page 1/2

Technical Specification

Power Source : DC 7.2 / 8.4 V
Power Consumption : 9W
Video Recording System : EIA Standard (525 lines, 60 fields)
NTSC color signal
Frequency generated or used : 10 kHz - 49.152 MHz
Operating Temperature : 0°C - 40°C
Operating Humidity : 10 % - 75 %

Device Operation Description

Performance Explanation of Digital Video Camera

1) Camera Mode(Camera → DV Output /Monitor Output/Tape Recording)

Light on CCD through the lens is converted into the electric analog signal, and it goes to the Camera Process. Through the Camera Process, such analog signal is converted into the digital signal via built-in A/D Converter. And its digital signal goes to Camera I/F of VCR.

Then, it is transferred from Camera I/F to be compressed through Format process and is converted to DV Format signal. DV Format signal is processed through DIF-PROCESS to output the DV signal(1394 signal) through DV cable to PC or another DVC. Also, as another way, it is converted into Tape Format signal through Format Process, which is recorded on the tape.

And NTSC Video Signal which was D/A converted through Camera I/F goes to VIDEO AMP. And the amplified VIDEO signal is transferred via MULTI connector to A/V Output box. Then it is output to TV monitor through line-out.

2) Playback Mode(Tape signal → DV Output/Monitor Output)

Signal incoming via CYL Head from tape is converted through Format Process into DV Format signal. DV Format signal is processed through DIF-PROCESS to output DV signal (1394 signal) through DV cable to PC or another DVC. Also, as another way, it is decompressed through Format process, and NTSC Video signal which was D/A converted through Camera I/F goes to VIDEO AMP. And the amplified VIDEO signal is transferred via MULTI connector to A/V Output box. Then it is output to TV monitor through line-out.

3) DV Input Mode(DV Input signal → Monitor Output/Tape recording)

DV signal(1394 signal) through DV cable from PC(or another DVC) is converted into DV Format signal through DIF-PROCESS. DV Format signal is converted into Tape Format signal through Format Process, which is recorded on the tape. Also, as another way, it is decompressed through Format process, and NTSC Video signal which was D/A converted through Camera I/F goes to VIDEO AMP. And the amplified VIDEO signal is transferred via MULTI connector to A/V Output box. Then it is output to TV monitor through line-out.

List of Frequency

CLOCK of Digital Video Camera

CIRCUIT Name	CLOCK
Timing Generator	22.5 MHz
CCD	11.25 MHz
Camera Process	11.25 MHz
Camera I/F	4.5 MHz
	13.5 MHz
	18.0 MHz
	27.0 MHz
Format Process	18.0 MHz
	24.576 MHz
	41.85 MHz
CYL Head	10 kHz ~ 20.925 MHz
DIF Process	18.0 MHz
	DC ~ 49.152 MHz
Power	820 kHz
Timer Clock	32.0 kHz
Character Generator OSC	7.0 MHz
VCR Sub CPU	13.5 MHz
VCR System CPU	27.0 MHz
LCD Process (PLL)	19.07 MHz
EVF Process (PLL)	10.38 MHz

The diagram illustrates the DV system architecture, showing the flow of data and control signals between various components. The system is organized into several functional blocks:

- Input/Control Section:** Includes the **CVL Head** (connected to **10KHz~20.925MHz**), **Timing Generator** (22.5MHz), **VCO** (27MHz, 18MHz), and **Power OSC** (820KHz).
- Processing Section:**
 - Camera I/F** (4.5MHz, 13.5MHz) receives signals from the Timing Generator and VCO.
 - Camera Process** (11.25MHz, 22.5MHz) and **3CCD** are connected to the Camera I/F.
 - Compression Process** (18MHz, 24.576MHz) receives signals from the Camera Process and Camera I/F.
 - DIF Process** (18MHz) receives signals from the Compression Process and Camera I/F.
 - Character Generator OSC** (7MHz) and **Timer Clock** (32KHz) provide timing signals to the **VCR Sub CPU** and **VCR System CPU**.
 - Camera CPU** (16MHz) is connected to the Camera Process.
 - VCR Sub CPU** (14.748MHz) and **VCR System CPU** (27MHz) manage the system's operation.
- Output Section:**
 - VIDEO AMP** (27MHz) receives signals from the Camera I/F and Camera Process.
 - AUDIO I/F** (24.576MHz) receives signals from the Compression Process.
 - LCD Process** receives signals from the Camera Process and Camera I/F.
 - Character Generator** receives signals from the Character Generator OSC and VCR Sub CPU.
 - Timer** receives signals from the Timer Clock and VCR Sub CPU.
 - Power OSC** (820KHz) provides power to the system.
 - Output Devices:** The system outputs to a **MULTI JACK** (Audio Output, Video Output, Edit 5pin), an **AV Output Box**, and a **TV Monitor** (To TV Monitor).

The diagram also shows various frequency ranges and specific frequency values (e.g., 10KHz~20.925MHz, 41.85MHz, 18MHz, 24.576MHz, 27MHz, 14.748MHz, 32KHz, 820KHz) associated with different components and signal paths.

EXHIBIT # : 4-2
FCC ID : ACJ927123K
OUR REF. : MKES99-F014
MODEL NO. : PV-DV950D