

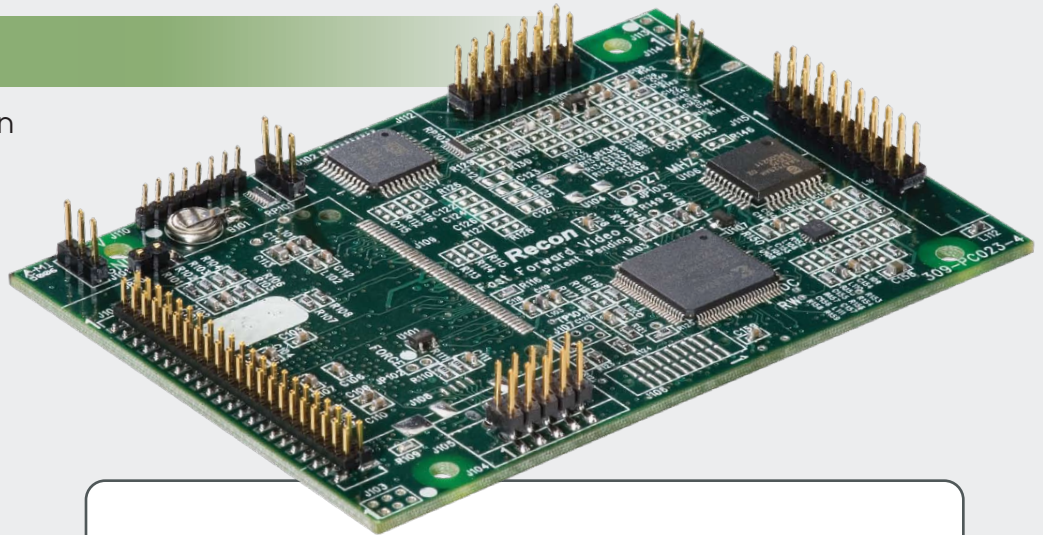
Recon 4™ Digital Video Recorder



Ultra Compact DVR Provides Broadcast Quality Video and Audio for Portable Applications

STANDARD FEATURES

- Scalable Motion JPEG compression
- Analog Composite & Y/C Inputs & Outputs
- Time/Date Stamp & Character Display
- Low 3 Watt Power Consumption
- Time-Lapse Recording
- Loop Record
- 5 GPI Switch Inputs
- 2 GPI LED Outputs
- IDE Interface
- RS-232 Control
- USB 2.0 Port
- NTSC or PAL
- 2 audio channels
- Chase Lock



OPTIONAL FEATURES

- Compact Flash Slot
- RS 422 Control
- PC Control Software
- SMPTE Time Code
- SDI

APPLICATIONS

- In Vehicle
- On Body
- Remote / Portable
- Airborne
- OEM

MARKETS

- Military / Intelligence
- Law Enforcement
- Broadcast/Film
- Medical
- Surveillance

MINIMUM SIZE MAXIMUM PERFORMANCE

The “go anywhere” design behind this professional quality, compact board level DVR offers the ultimate flexibility to OEM manufacturers. At only 3.9”L x 2.8”W x 1”D in size, a low power DC input of 5v, and record time up to 58 hours on laptop style hard drives, you can now design for stand-alone or portable applications without sacrificing performance or quality.

HIGH RESOLUTION

Based on the same architecture as the broadcast professional Omega™ DVR, Recon provides an outstanding 720 x 486 pixel image resolution. Using integrated Motion JPEG, it provides scalable compression with high quality video inputs and outputs to maximize image quality.

MAXIMUM CONTROL VERSATILITY

With a choice of either pre-assigned GPI inputs or an extensive menu of control and configuration options available through RS-232 or RS-422 control, Recon is versatile enough to satisfy a broad variety of demanding DVR applications in many diverse markets.

FV: 03/20/09R

Fast Forward Video

1151 Duryea Avenue, Irvine, California 92614

Ph. 949.852.8404

A DVR Technology Company

VIDEO INPUT
 Analog Input: Composite and S-Video (Y/C)
 Levels: 1.0Vp-p, 75 ohms
 Standards: 525/60 (NTSC) or 625/50 (PAL)

VIDEO OUTPUT
 Analog Output: Composite and S-Video
 Horizontal Resolution: 550 TV lines (at 5:1 compression)
 Levels: 1.0Vp-p, 75 ohms
 Standards: 525/60 (NTSC) or 625/50 (PAL)
 Connections: multi-pin for component

VIDEO INPUT DECODER
 Format: Digital 4:2:2 YCrCb
 60 fields per second NTSC
 50 fields per second PAL
 Digital Color Space: YUV
 Sampling: 13.5 MHz
 Pixel Resolution: 720 x 486 pixels (525/60)
 720 x 576 pixels (625/50)
 S/N Ratio: 50 dB
 Bandwidth: 7 MHz (-3 dB)
 Differential Gain: 2%
 Differential Phase: 2 deg.
 ADC Differential Linearity: +/- 0.7 LSB
 ADC Integral Linearity: +/- 1.0 LSB

VIDEO OUTPUT ENCODER
 Digital Color Space: Digital 4:2:2 YCrCb
 Analog Bandwidth: Y: 6.75 MHz
 C: 1.3 MHz
 Composite: 4.5 MHz (NTSC)
 5.0 MHz (PAL)

DAC Resolution: 10 bits x 3
 S/N Ratio: 60 dB

VIDEO COMPRESSION
 Codec: Zoran
 Method: JPEG (Joint Photographic Experts Group)
 Compression Ratio: Variable from 4:1 to 20:1

MEMORY
 Multi-ported Frame Buffer: 8 MB DRAM
 Aggregate Bandwidth: Greater than 45 MB/second

HARD DISK CONTROLLER
 Protocol: ATAPI DMA Mode 3
 Maximum Data Rate: 16.6 MB/sec
 Supported 2.5" IDE Drive: Hitachi 2.5" IDE - 0A28419
 SanDisk Ultra II - SDCFH-4096 or
 Extreme III - SDCFX3-4096 (32GB)
 Supported CF Card: 4 to 20 minutes per GB

MICROPROCESSOR
 Type: Intel 80386EX
 Clock Speed: 40 MHz
 Local ROM/EPROM: 1MB Flash EEPROM
 Local SRAM: 1 MB 0 wait state

COMMUNICATIONS INTERFACE
 RS-232 Interface: Conforms to Sony "Remote-1 (9 pin)" protocol-38400 baud, 8 data bits, odd parity, 1 stop bit
 38400 baud - Sony Remote-1 (9-Pin) Odetics 2.0

RS-422 (Option):
 USB Port:

TIME CODE
 SMPTE/EBU: Longitudinal (LTC)

AUDIO SPECIFICATIONS
 Resolution: 16 bits
 Sampling Rate, FS: 48 KHz
 Channels: 2 in, 2 out
 Dynamic Range: 80 dB
 Total Harmonic Distortion: .022%, -73 dB
 Intermodulation Distortion: -90 dB
 Crosstalk: -80 dB
 Interchannel Gain Mismatch: +/- 0.5 dB
 Input Voltage: 1 VRMS nominal, 3V p-p max
 Input Impedance: 20k ohms
 Full Scale Output Voltage: 0.707 VRMS, 2.0V p-p
 Output Impedance: 600 ohms

MICROPHONE INPUT
 Input Signal Level (0 dB): 1.0 VRMS
 Signal-to-Noise Ratio 0 dB gain: 80 dB
 Dynamic Range: -60 dB full-scale input:
 Total Harmonic Distortion: 80 dB
 -1 dB input, 0 dB gain: -60 dB
 Input Resistance: 14 K Ohms

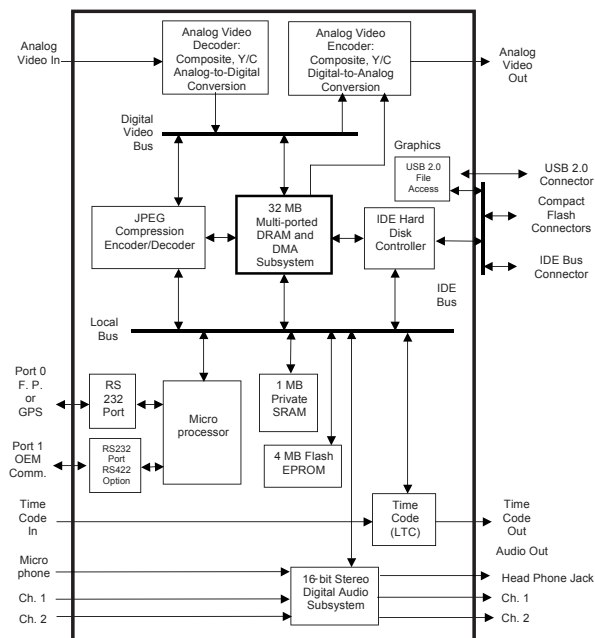
STEREO HEADPHONE OUTPUT
 Maximum Output Power: 40 mW into 16 ohms
 Signal-to-Noise Ratio: 90 dB
 Total Harmonic Distortion: 1.0%

OPERATING CONDITIONS
 Temp: 0c to 50c
 Humidity: 90% relative humidity with no visible condensation

SOFTWARE
 Optional: Recon control interface. Runs on Windows 9x/2000, and XP.

GENERAL
 Size: 2.8" W x 3.9"L x 0.6" D
 Power Consumption: 3 Watts not including hard disk
 Requires regulated input of +5V

WARRANTY: 1 year



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1151 Duryea Avenue
 Irvine, California 92614

www.ffv.com
 sales@ffv.com

Ph. 949.852.8404
 Fx. 949.852.1226