

Features

- ⊕ Extremely light and compact
- ⊕ Records one video and two audio channels
- ⊕ Low power consumption
- ⊕ Non-destructive IRIG-B time code and date stamping
- ⊕ NTSC and PAL compatible
- ⊕ Motion JPG compression
- ⊕ Selectable compression ratio
- ⊕ Dual CF card interface for removable media
- ⊕ Discrete and serial remote control interfaces



General Description

The Sekai ADV-21 with IRIG-B time code is a compact, rugged solid state video recorder for airborne applications that prioritizes excellent video quality and ease of use. Two audio channels can be recorded together with either Composite or Y/C video. The recorder accepts both PAL and NTSC video formats. Motion JPEG recording with variable compression offers the best picture quality available with maximum flexibility; the compression ratio is user selectable from 4:1 to 20:1. The ADVSR operates on 28VDC vehicle power and requires only 5W, the lowest power consumption in the industry.

This unit accepts an IRIG-B signal and non-destructively integrates the time code within the video stream so that no part of the image is covered by the time code data. The IRIG-B time code is stamped on each individual frame and can be retrieved during playback using Sekai's ADVSR Video Player (software provided with unit).

ADVSR Applications

- Flight test applications
- UAVs
- Police Helicopters
- Law Enforcement Agencies
- Broadcast applications
- All terrain vehicles
- Aerial Scientific Research Applications





ADV-21/IRIG

Compact Solid State Video Recorder
with IRIG-B Timecode

General

| | |
|-------------------|-----------------------------|
| Recording Media | Compact Flash (CF) |
| Video format | NTSC and PAL |
| Analog Resolution | 550TVL (at 5:1 compression) |
| Power Requirement | 28Vdc, Mil-Std-704D |
| Power Consumption | <5W |
| Dimensions | 2.6"H X 5.84"W X 5.27"D |
| Weight | 2.9 lbs (1315g) |
| Connectors | MIL-C-38999 Series III |

IRIG-B

| | |
|-----------------|---------|
| Connectors | BNC |
| Input Impedance | 25K ohm |

Control Interfaces

| | |
|----------------|------------------------|
| Digital Serial | RS-232 (optional -422) |
| Commands | All typical VCR modes |
| Status | All typical VCR status |
| Discrete | Switch closures |
| Commands | Basic operation modes |
| Status | Basic operation status |

Video

| | |
|------------------------|----------------------------|
| Signal Standards | RS-170A, NTSC CCIR, PAL |
| S-Video Input | Y: 1.0Vp-p, C: 0.3Vp-p |
| S-Video Output | Y: 1.0Vp-p, C: 0.3Vp-p |
| Composite Video Input | 1.0Vp-p |
| Composite Video Output | 1.0Vp-p |

Video Encoding

| | |
|---------------------|--|
| Recording Format | Digital 4:2:2 YCrCb |
| Digital Color Space | YUV |
| Sampling | 13.5MHz |
| Pixel Resolution | 720 X 486 pixels (525/60) 720 X 576 pixels (625/50) |
| S/N Ratio | 50 dB |
| Bandwidth | 7MHz (-3dB) |
| Compression Method | Motion JPEG |
| Compression ratio | 1:4 to 1:20 variable preset |

Audio

| | |
|------------------|-------------------|
| Channels | 2 in, 2 out |
| Analog Input | 1.0 Vrms, nominal |
| Analog Output | 1.0 Vrms |
| Input Impedance | 35K Ohms |
| Output Impedance | 10K Ohms |
| Resolution | 16 bits |
| Sampling Rate | 48KHz |
| Dynamic Range | 90dB |

Recording Media

| | |
|-----------------------|-----------------------|
| Type | Compact Flash (CF) |
| Supported Media | Multi-word DMA mode 2 |
| Maximum Compact Flash | 2 chips |
| Maximum Data Rate | 16.6 MB/sec |
| Recommended Media: | |

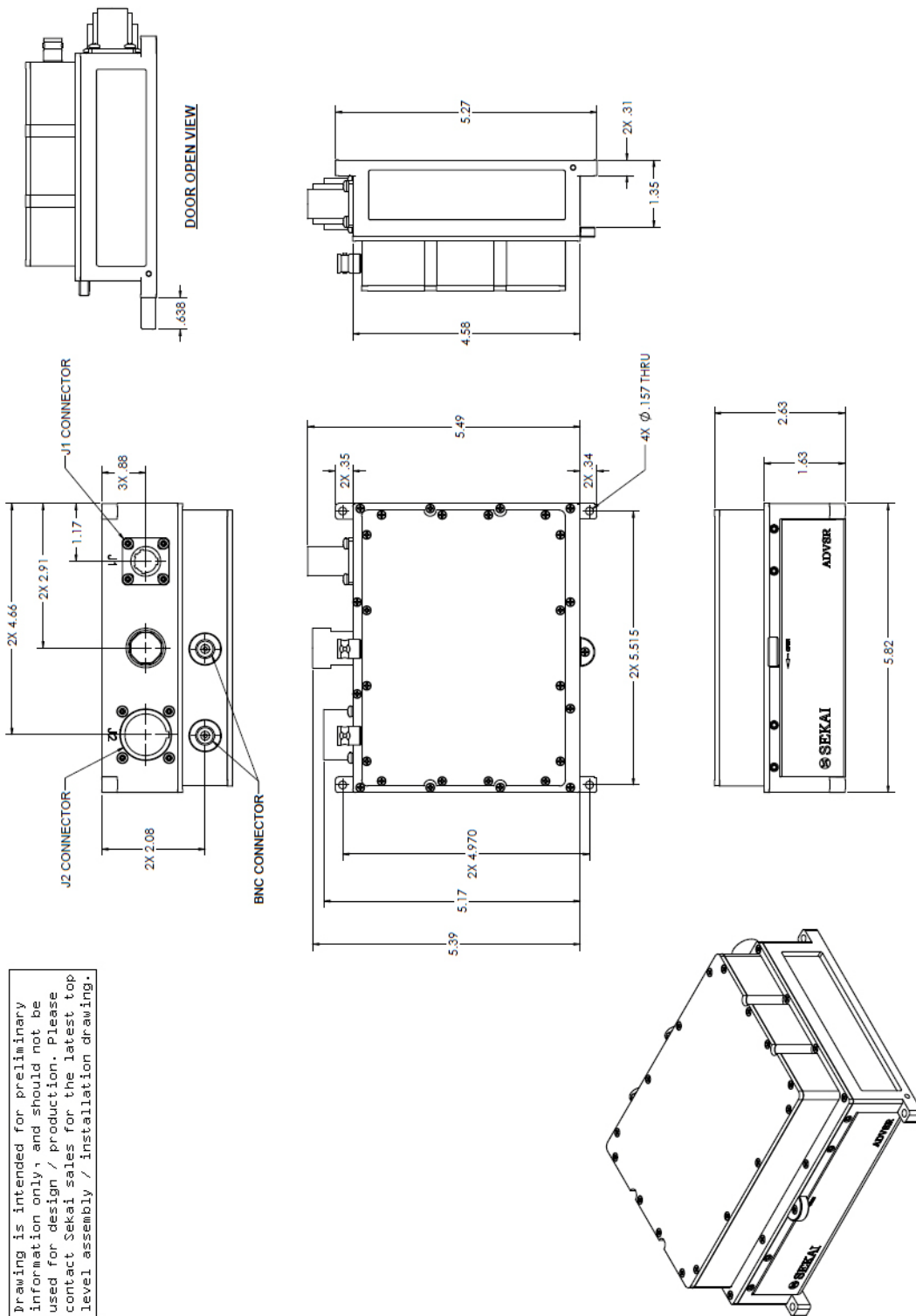
| Delkin Devices | | |
|-------------------|------|----------------|
| Part Number | Size | Temp. Range |
| CE08TFNHK-XX000-D | 8GB | -40°C to +85°C |
| CE16TFPHK-XX000-D | 16GB | -40°C to +85°C |

| SMART Technologies | | |
|--------------------|------|----------------|
| Part Number | Size | Temp. Range |
| SG9CF8GHYCB | 8GB | 0°C to +70°C |
| SG9CF8GHYCB I | 8GB | -40°C to +85°C |
| SG9CF16GHYCB | 16GB | 0°C to +70°C |
| SG9CF16GHYCB I | 16GB | -40°C to +85°C |

Environmental Specifications

| | |
|----------------------|--|
| High Temperature | MIL-STD810E, Method 501.3 Procedure I: +80°C (Storage)* Procedure II: +55°C (Operational) |
| Low Temperature | MIL-STD-810E, Method 502.3 Procedure I: -54°C (Storage)* Procedure II: -40°C (Operational) |
| Acceleration | MIL-STD-810E, Method 513.4 Procedure II, 15G's, all axes |
| Vibration | MIL-STD-810E, Method 514.4 (Jet Aircraft & Helicopter profiles) |
| Shock | MIL-STD-810E, Method 516.4 Procedure I & V, 40G's 6-9msec Procedure IV, 122cm* |
| Altitude | MIL-STD-810E, Method 500.3 Procedure II, -15,000* to 60,000ft |
| Humidity | MIL-STD-810E, Method 507.3 Procedure III* |
| Salt Fog | MIL-STD-810E, Method 509.3* |
| Sand and Dust | MIL-STD-810E, Method 510.3* Blowing Dust (para II-1.1.1) |
| Explosive Atmosphere | MIL-STD-810E, Method 511.3 Procedure I |
| EMI | MIL-STD-461D / 462D RE-102 CE-102 |

**Design Goals
All information subject to change without notice*



Drawing is intended for preliminary information only, and should not be used for design / production. Please contact Sekai sales for the latest top level assembly / installation drawing.