



VRDV-4000-xx-ICD
VRDV-4002-xx-ICD
VRDV-4010-xx-yy-ICD
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ICD
Issue No.. F
MoD ref.. -

## Interface Control Document

# VRDV-4000-xx-ICD VRDV-4002-xx-ICD VRDV-4010-xx-yy-ICD





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### General Description

This specification applies to the single and dual card flash disk digital video recorder models VRDV-4000-xx/ VRDV-4002-xx /VRDV-4010-xx-yy and variants.

The Video Recorder has part numbers that use the following principals:  
VRDV-4000-xx, VRDV-4002-xx or VRDV-4010-xx-yy

VRDV	indicates that the product is a Recorder (Video Recorder Digital Video)
4000 or 4002	Recorder type/model Single recorder
xx	This denotes the version or configuration of the recorder as follows:  01:625 line Composite video PAL input 02 625 line Y/C video PAL input 03 625 line RGsB video input (option)  51:525 line Composite video NTSC input 52 525 line Y/C video NTSC input 53 525 line RGsB video input (option)

VRDV	indicates that the product is a Recorder (Video Recorder Digital Video)
4010	Recorder type/model Dual recorder
xx-yy	This denotes the version or configuration of the recorders. Where only one suffix is present , both recorders are identical. xx designates the upper recorder configuration yy the lower recorder configuration as follows:  01:625 line Composite video PAL input 02 625 line Y/C video PAL input 03 625 line RGsB video input (option)  51:525 line Composite video NTSC input 52 525 line Y/C video NTSC input 53 525 line RGsB video input (option)

The digital video recorders have been optimised for aircraft operation typical in airborne surveillance applications.

The Recorder contains:

- Power input filter, power supply module and control card
- Video processing and control electronics
- PCMCIA card slot writer
- Controls and front panel assembly



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The recorder is a high quality, rugged, MPEG II format recorder with a compact and practical design that can be installed horizontally or vertically.

- Typically 4 hours NTSC and PAL recording using 8Gb flash card (approx 24 min./GByte at highest quality setting) The dual deck has two independent simultaneous recorders.
- Solid state recording (no moving parts)
- Optional wired serial remote, or remote control from any AVDU series LCD video display
- Horizontal or vertical operation
- Composite, Y/C, RGB (optional) input

The variants are designed for recording edit ready clips directly to their integrated flash card memory from any composite video source...while you're flying. Drive technology eliminates the lengthy "capture" and digitisation process in preparing evidential presentations. Clips are instantly accessible by your computer based Non Linear Editing System (NLE) for report preparation and archiving. The output may also be transferred to disk or tape.

Outline Specifications:	
Disk interface	PC card (PCMCIA)Compact Flash via adapter
Video:	
Video standards supported	PAL /NTSC
Video compression	MPEG-2
Video input / output levels	1 Vpp 75 ohm
Digitising resolution (PAL)	8 bit Y/UV, 720 pixels by 576 lines
Audio:	
Number of channels	2 (stereo)
Compression	MPEG1 level 2
Input level	line
Power-up to record time	< 2 Seconds
Record time	High quality:30 min / Gbyte - Medium quality:1 hour / GByte

When two units are used in line, auto cascade recording is enhanced by the VRDV-40xx "automatic start" feature, which triggers the recorder to automatically begin recording when 1% of space remains on its host compatible VRDV-40xx-xx or VRDV-3000-xx-yy recorder. Its native 28-volt DC power source even allows the deck to be used for fieldwork or to be powered directly from an aircraft power supply or battery. The deck is designed for horizontal or vertical mounting.

There are a number of recording configurations available:

VRDV-4000-xx Single recorder

VRDV-4002-xx Single recorders in a dual deck housing

VRDV-4010-xx-yy Dual recorder



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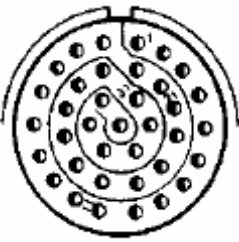

## Interface Control Document

<b>Miscellaneous</b>	
Safety	The design of the recorder is such that any failure will not result in a hazardous condition and provides fail-safe features for safety of personnel during the installation, operation, maintenance and repair
Input protection	Short circuit to Chassis of any input will not damage the equipment nor cause an unsafe condition.
Output protection	Short circuit to earth of any output will not damage the equipment nor cause an unsafe condition.
Bonding	All metallic parts are bonded with a max resistance between any two parts of 0.5Ω.
Earthing	The equipment is earthed internally to a chassis bonding tag connected to Pin C of the power connector. All D.C. neutral or negative connections as well as signal returns are brought-out via the external connectors and separated from each other. (exception made for R.F. circuitry)
Insulation Resistance	Insulation between any two points of this equipment not electrically connected to each other is at least 20M ohms. This measurement is made on a complete item of equipment.
Cooling	Cooling of the equipment is by natural convection with the assistance of a small internal stir fan. The installer must ensure that the case temperatures are not exceeded.

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### Electrical

#### Pin assignment

<b>Signal connector</b>		
 <p>Size 22D contacts Wire size 28,26,24,22 Gauge 1.5, 2, 3, 5A max</p>	<b>Unit Connector</b>	
	D38999/20WD 35PN	FLANGE MT RECEP 37 WAY PIN
	<b>Mating Half (cable connector)</b>	
	D38999/26WD 35SN	PLUG 37 WAY SKT
	G8801-15M	SIZE 15 Backshell
<b>Remote connector</b>		
 <p>Size 22D Contacts Wire size 28,26,24,22 Gauge 1.5, 2, 3, 5A max</p>	<b>Unit connector</b>	
	D38999/20WB 35PN	FLANGE MT RECEP 13 WAY socket
	<b>Mating Half (cable connector)</b>	
	D38999/26WB 35SN	PLUG 13 WAY Plug
	G8801-11M	SIZE 11 Backshell
<b>Video IN/OUT connectors</b>		
	<b>Unit connectors</b>	
		Isolated BNC (Composite video input and output)

For pin outs see tables below

Remote Connector		Standard configuration	RS422 Option
1	+28V DC input		
2	28V Return		
3	Chassis		
4	Data (+)		
5	Data (-)		
6			RS422 + (input option)
7	+12V DC input (optional not required)		
8	12V DC return / Data screen		
9			RS422 + (output option)
10			RS422 - (output Option)
11		Record Start (Short to pin 8 to start)	RS244 - (input option)
12	Illumination Bus (optional not required)		



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13	PSU inhibit (short to pin 2 for off – defaults to on - floating) do not exceed 2V DC on this input
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Signal Connector			
1	Video 2 Upper	S-Video : Chroma in (+)	
2		S-Video : Chroma in (-)	
3		S-Video : Luma in (+)	
4		S-Video : Luma in (-)	
5	Video 1* Upper	Composite video in (+)	
6		Composite video in (-)	
7	Video 3 Upper (Option)	Green (SOG) in (+)	
8		Green (SOG) in (-)	
9		Blue in (+)	
10		Blue in (-)	
11		Red in (+)	
12		Red in (-)	
13	Video 5 Lower	S-Video_2 : Chroma in (+)	
14		S-Video_2 : Chroma in (-)	
15		S-Video_2 : Luma in (+)	
16		S-Video_2 : Luma in (-)	
17	Video 4* Lower	Composite video in_2 (+)	
18		Composite video in_2 (-)	
19	Video 6 Lower (Option)	Red in_2 (+)	
20		Red in_2 (-)	
21		Green in_2 (SOG) (+)	
22		Green in_2 (SOG) (-)	
23		Blue_2 (+)	
24		Blue_2 (-)	
25			
26			
27	Audio	Upper	Left IN
28			Right IN
29			Ground
30			Left OUT
31			Right OUT
32		Lower	Left IN
33			Right IN
34			Ground
35			Left OUT
36			Right OUT
37	N/C	No connection	

\* looped onto the rear panel BNCs  
Video inputs used are determined by the part number at build



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### Maintenance

There are no user serviceable parts inside the unit.

1st Line maintenance

- Cleaning of Front Panel

### Handling Precautions

Handling of the Recorder should be in compliance with Real-Time Vision's handling principles.

- 1) Since tape transport is a precision assembly and is easily damaged, observe precautions in order not to damage it by allowing foreign bodies, dust, etc. to enter.
- 2) Be sure to turn off power supply when inserting or disconnecting the input connectors.
- 3) Wipe off water or fluid droplets immediately. Long contact with water or other fluids may cause discoloration or spots.
- 4) When the surface is soiled, wipe it with absorbent cotton or other soft cloth.
- 5) Since the recorder contains precision bearings, it may break or distort if dropped or bumped on hard surface.
- 6) Since CMOS LSI is used in this module, take adequate static electricity precautions and ensure correct human earth bonding when handling.
- 7) Do not open nor modify the Assembly.
- 8) Do not press or force the cassette tape into or out of the machine.
- 9) At the insertion or removal of the Power and Signal Interface Connector, ensure that the sockets are free from debris and be sure not to damage the Interface pins
- 10) After installation of the unit into a mounted position, do not twist nor bend the unit even momentarily. When designing a suitable mounting, it should be taken into consideration that no bending/twisting forces are applied to the unit from outside. Otherwise the tape transport module may be damaged.

#### LIMITATION OF LIABILITY

The manufacturer's liability for damages to customer or others resulting from the use of any product supplied hereunder shall in no event exceed the purchase price of said product.

#### IMPORTANT USAGE NOTE

This equipment is for use by developers and integrators, the manufacturer accepts no liability for damage or injury caused by the use of this product. It is the responsibility of the developer, integrators or other user of this product to:

- Ensure that all necessary and appropriate safety measures are taken.
- Obtain suitable regulatory approvals as may be required.
- Check power settings to all component parts before connection.

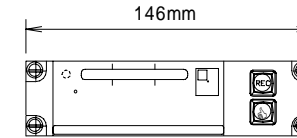
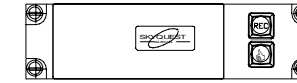
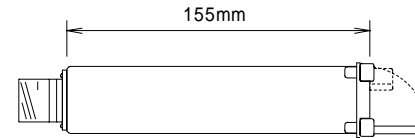
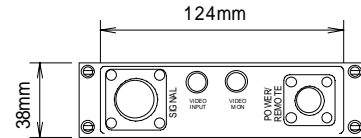
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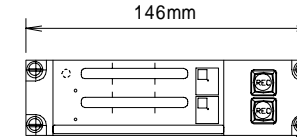
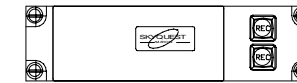
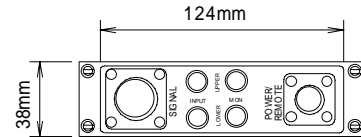
# Interface Control Document

DRG No. VRDV/ 40xx / xx

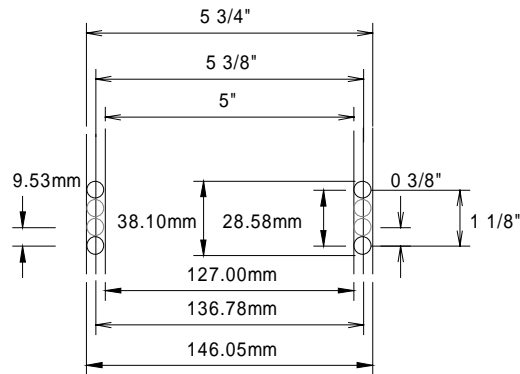
VRDV-4000-01 Single card Flash recorder



VRDV-4002-01 Single card Flash recorder (Lower card slot blanked)  
VRDV-4010-01 Dual card Flash recorder



1/4 Turn Dzus fasteners in 4 places



1/4 Turn Dzus Mounting dimensions  
5.75" (146mm) max dimension  
3/8" (9.53mm) pitch centres  
5.375" [5 3/8"] (136.78mm) fixing centres

THIRD ANGLE PROJECTION  
DO NOT SCALE

MATERIAL:-					
FINISH:-					
C.JS	C	1st May 2007	AJM		
C.JS	B	18th JUN 2005	AJM		
C.JS	A	15th May 2005	AJM		
DRAWN	ECO No.	ISS.	ACTIONED	APPROVED	CHECKED

DIMENSIONS :-	
SCALE NTS	
GENERAL TOLERANCES	
TWO DECIMAL PLACES	+ 0.025
ONE DECIMAL PLACE	+ 0.125
NO DECIMAL PLACE	+ 0.4
ANGLES	+ 1°

**Real-Time Vision**  
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Laindon  
Essex, SS15 6SD

PROJECT :-		ENGLAND UNITED KINGDOM
TITLE:- Video Recorder Digital video		
DRG No.	VRDV / 40xx / xx	

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