# DVR3-440
## Digital Video & Data  Recorder with 4 camera inputs

## ST9377 PAL/NTSC

## Overview

Stack's new range of Digital Video Recorders (DVRs) can be used as a conventional DVR to record video and audio. They can also record data as well as video, in one compact unit, for the ultimate in Synchronized Video-Logging.
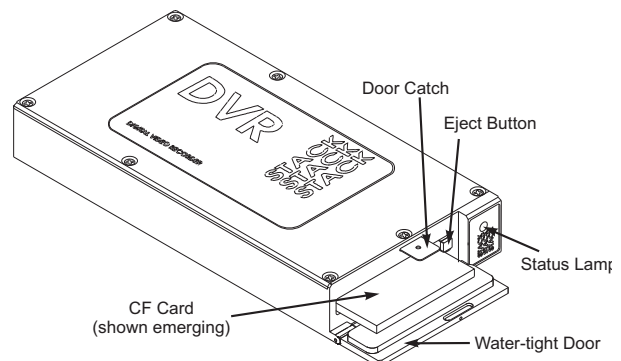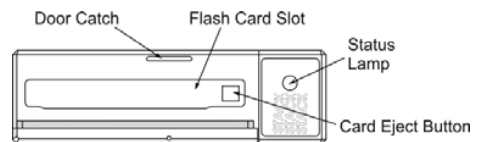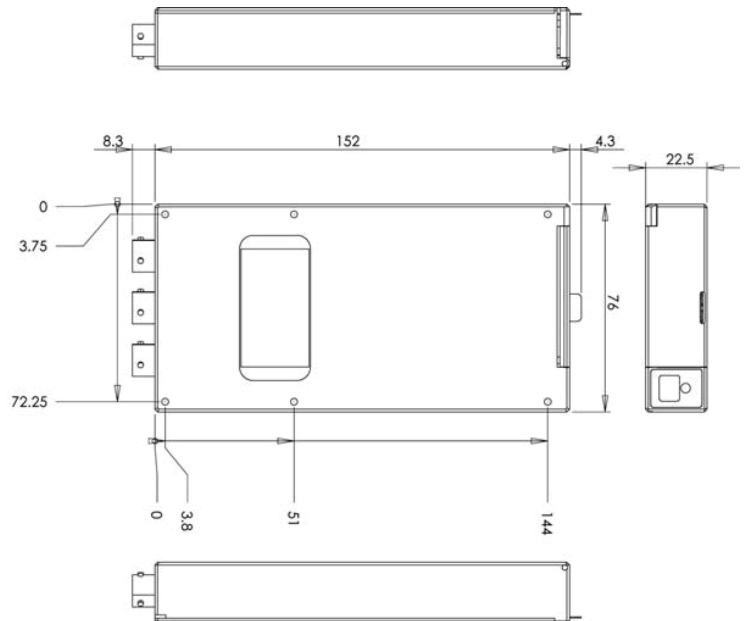
Stack DVRs can be connected directly to any Stack Dash Display or Data logging system by CAN Bus.  Up to 128 channels of data, including GPS and the internal 3-axis G-sensor channels, can be recorded together with high quality MPEG-2 video and audio direct to a Compact Flash (CF) card. The video and data recordings can be analysed together in the supplied Stack DataPro analysis software. Video recordings can also be played back by any PC media player or archived and viewed on a DVD player.

Stack's range of DVRs combine ruggedness, reliability and recording quality with a slim, lightweight design that's perfect for all harsh environment applications.

## Highlights

- Video-Logging with synchronized recording of vehicle data channels.
- CAN bus interface for direct connection to Dash Displays and Logging Systems or ECUs.
- Data recording of up to 128 data channels at 1-500Hz sampling rates.
- Solid-state, no moving parts, ensuring reliable operation year after year.
- User configurable bit-rate up to 20 Mbps.
- Up to 4 camera inputs (composite PAL or NTSC).
- 16:9 Widescreen or 4:3 screen ratios.
- -20 to +80°C (-4 to 176°F) operating temperature range.
- 128 GB maximum card size.
- Over 36 hours of high quality, full resolution recording (subject to CF card size).
- 9 to 20V DC powered.
- Fully sealed to IP67.
- Mil-type "AS" connectors.
- External status LED.
- Sealed memory card door (when closed).
- Real-Time date & time overlay.
- 3 axis g-sensor data overlay.
- GPS data overlay option (NMEA 0183 Interface).
- Up to 2 secs. (Supercaps) Brownout Protection option.
- Continuous Loop Recording modes.
- Event Recorder mode, with pre- and post-trigger record periods.
- Automatic "Alarms" start/stop recording using built-in g-sensor or any data channel.
- Connectors: 3 x 9W DDAS.

## Dimensions

# Specifications: DVR3-440

## RECORDING - VIDEO

| | |
|---|---|
| Number of camera inputs | 4 |
| Video input multiplexing options | Any format of 1 to 4 cameras on one screen |
| Video Standards Supported | PAL/NTSC |
| Composite Video Input | Composite 1V pk-pk |
| Video Frame Rate | 30 fps (NTSC); 25 fps (PAL) |
| Video Monitor Output | 1 V pk-pk Composite |
| Compression Format | MPEG-2 MP@ML compression Program Stream |
| Resolutions Supported | PAL: 720x576; 720x400; 480x576; 352x576, 352x288  NTSC: 720x480; 720x400; 480x480; 352x480; 352x240 |
| Quality - bitrate | User configurable bit-rate up to 20 Mbps. |
| CF Record Time | 7-140 Mins/Gbyte |

## RECORDING - AUDIO

| | |
|---|---|
| Number of audio channels | 2 |
| Input Level | Mic or Line Level +3 to -30dB |
| Active Gain Control (AGC) | Yes |
| Compression Format | MPEG1 Layer II, 2 ch. 16 bit, 48 kHz |

## RECORDING - DATA

| | |
|---|---|
| Data Recording | 128 data channels at 1-500Hz sampling rates |

## DISK INTERFACE

| | |
|---|---|
| Disk Interface | Compact Flash; FAT32 |
| Maximum Card Size | 128GB |
| Maximum File Size | 2GB |
| File Format | MPEG-2; Windows Media Player & DVD compatible |

## MISCELLANEOUS

| | |
|---|---|
| Power up to Record start time | <20 Sec |
| Record Switch to Record start/stop time | <0.1 Sec (in ready to record state) |
| Lost recording time between 2GB files | None |
| Max video loss if power lost while recording | <last 1 Sec (see Brownout Protection option below to extend record time after power loss). |
| Brownout Protection option | Up to 2 Secs (dependant on camera load). Extends recording by up to 1 Sec |
| Configuration | Via USB |
| Real-Time Date & Time Overlay | 1 Sec resolution (0.001 Sec Option) |
| GPS Data Overlay (Option) | 1-20 Hz |
| 3 axis G-sensor Data Overlay | 12.5 Hz |
| GPS Receiver Interface (Option) | 1-20 Hz (NMEA 0183 Interface) |
| CAN-bus Interface (option) | Yes (up 1 Mbps) |
| Continuous Loop Recording | Yes |
| Event Recording Mode | Yes |
| Pre-trigger Period | 0 - 60 Mins |
| Post-trigger Period | 0 - 24 Hours |
| Event Counter Data Overlay Option | Yes |

## ENVIRONMENTAL

| | |
|---|---|
| Operating Temperature Range | -20ºC to +80ºC (-4 to 176ºF) |
| Storage Temperature Range | -40ºC to +80ºC (-40 to 176ºF) |
| Sealing | IP67 |
| Humidity | 0-100% RH Condensing |
| Vibration | 20g  50-2000 Hz swept sinusoidal 12 hour x 3 axes** |
| Shock | 50 G, 15 ms** |
| Radiated Emissions | EN55022B CiSPR22** |
| Conducted Emissions | EN55022B CiSPR22** |
| Radiated Immunity | EN55024B CiSPR24, 50 V/m** |
| Conducted Immunity | DIN40839 Cat IV** |

## GENERAL

| | |
|---|---|
| Mechanical Size | 151 x 76 x 21mm |
| Finish | Hard Anodised Aluminium |
| Weight (without Memory Card) | 380g |
| Operating Voltage Range | 9V to 20V DC (option for 20V-50V DC) |
| Reverse/Over-voltage Protection | -60V to +60V DC |
| Power Consumption (@ 12VDC) | ~5W |
| Standby Battery | Life > 5 Years |
| Connectors | 3 x 9W DDAS |

## Standard Components

The DVR3-440 is supplied with the following standard components:

| | | |
|---|---|---|
| **DVR3-440 Module** | ST99006X | 1 |
| **Power Lead** | ST918078 | 1 |
| **System Harness** | ST918118 | 1 |
| **Video Input Harness** | ST918107 | 1 |
| **Monitor Harness** | ST918114 | 1 |
| **Switch & LED Harness** | ST918105 | 1 |
| **CAM Plug to BNC Video Connector & Power Plug (2.1mm)** | ST918106 | 4 |
| **Configuration Software** | ST920039 | 1 |
| **DataPro Software** | ST920033 | 1 |
| **DVR3 User Guide** | ST542103 | 1 |

## Optional Components

The DVR3-440 may be supplied with the following optional components:

| | |
|---|---|
| **Bullet Camera- PAL, 560 TVL, 0.1 Lux** | ST8393 |
| **Bullet Camera- NTSC, 560 TVL, 0.1 Lux** | ST8394 |
| **Microphone** | ST8397 |
| **CAM plug to BNC & Power lead** | ST918106 |
| **GPS Receiver and Data Overlay Option (5Hz)** | ST8398 |
| **2GB Ruggedised High-Speed Metal Housing (-40ºC to +85ºC) CF Card** | ST390052 |
| **4GB Ruggedised High-Speed Metal Housing (-40ºC to +85ºC) CF Card** | ST390053 |
| **8GB Ruggedised High-Speed Metal Housing (-40ºC to +85ºC) CF Card** | ST390054 |
| **16GB Ruggedised High-Speed Metal Housing (-40ºC to +85ºC) CF Card** | ST390055 |
| **32GB Ruggedised High-Speed Metal Housing (-40ºC to +85ºC) CF Card** | ST390057 |
| **8GB High-Speed Metal Housing (+10ºC to +60ºC) CF Card** | ST390064 |
| **16GB High-Speed Metal Housing (+10ºC to +60ºC) CF Card** | ST390065 |
| **32GB High-Speed Metal Housing (+10ºC to +60ºC) CF Card** | ST390067 |
| **128 Channel Sync-Video Metadata Recorder option** | ST8336-PIN |
| **GPS Data Overlay option (20Hz)** | ST9398 |

## Note

\* Specifications quoted dependent on use of appropriate CF cards and are guaranteed only with Stack supplied Harsh Environment cards.

\*\* Environmental specification is for the DVR unit only. When combined with a CF card, the specifications will be reduced to the lesser of the two.

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