



Digital Shot Detection System (DSDS)

MAN-TC-410-000 (R01)

Owen Oil Tools LP

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Description and Specifications

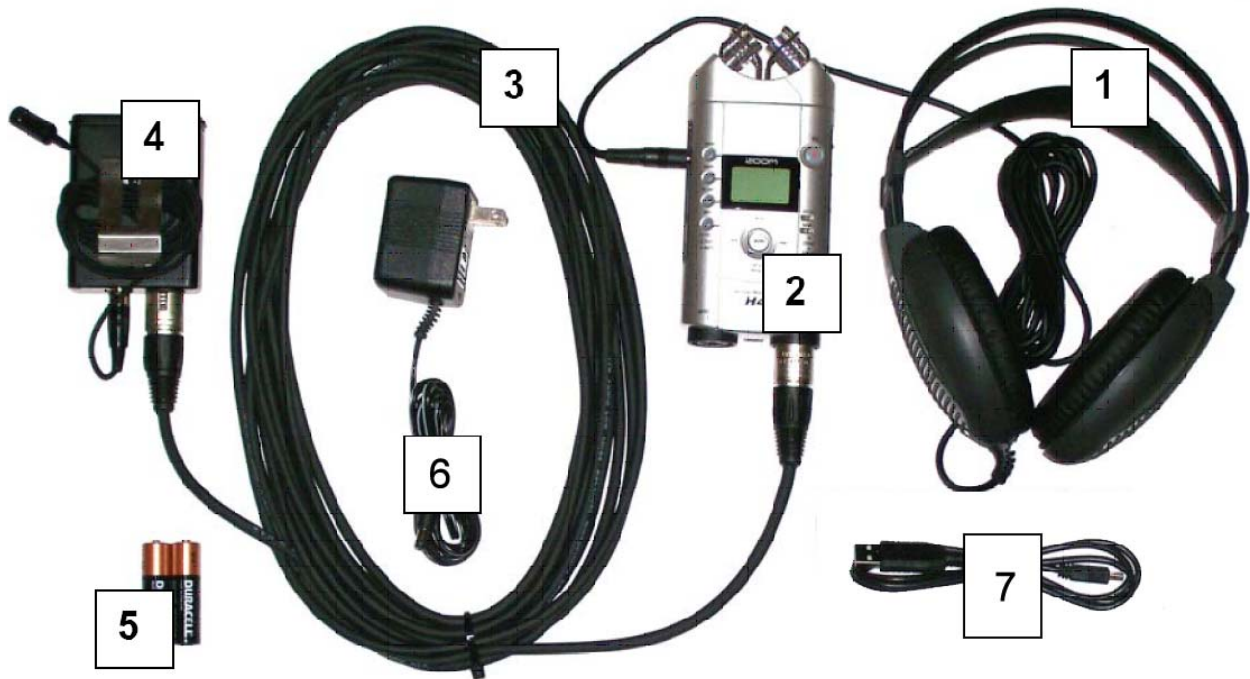
The Owen Digital Shot Detection System (DSDS) enables the user to monitor downhole acoustics on the tubular. The system is particularly well suited for monitoring the firing of Tubing Conveyed Perforating Guns.

Owen's DSDS offers state of the art technology to process and record the acoustic data. The data is stored using a portable recorder. The signal can be monitored and recorded simultaneously. The recorded signal can also be digitally stored.



H4 Digital Recorder	
Recording Technology	4 Track or Stereo
Monitoring	Record while monitoring or monitor on standby
Maximum Recording Length	1 Hour on Battery Power at max sampling
Sampling Frequency	16,000 Hz (-0.5dB)
Frequency Response	44.1 KHz
Recorder Weight	0.42 lbs, (190 grams)
Recorder Dimensions	2.8 in. x 6.2 in. x 1.4 in.
Power	2 AA 1.5V Batteries or 110 Power Adapters
Editing and Copying	Edit with Cubase LE, PC Version, burn CD-R Files
Accessory Memory	1 or 2 GB SD memory card
Microphone (lavaliere type)	
Frequency response	40-20,000 Hz
Microphone Weight	0.1 oz, (2.8 grams)
Microphone Dimensions	0.98 in. long X .39 in. diameter
Power Module Weight	5.2 oz, (147 grams)
Power Module Dimensions	3.27 in. H x 2.48 in. W x .87 in.D
Power or Phantom Power	1 AA 1.5V /UM3 Battery or – 9-52V DC 2mA TYP
Connection Type	Integral 3-pin XLR Type
Carrying Case	
Size	20 in. X 14 in. X 8 in.

Bill of Materials



Item	Qty	Description
1	1	Headphones, AKG K55
2	1	H4 Digital Recorder
3	1	Microphone Cable, Horizon CK25, 25 ft
4	1	Microphone, Owen Assembly
5	2	AA Batteries, 1.5V
6	1	AC Adapter, H4 Digital Recorder
7	1	USB Connector Cable
-	1	Cubase LE, PC Version (not shown)
-	1	DSDS Technical Manual (not shown)
-	1	Manufacturer's Operational Manual (not shown)



Warning: Always be sure to follow safe operating practices as found in API RP-67 and in accordance with any government regulations, manufacturers recommendations and company policies!

1.0 DSDS Overview

1.1 The Owen DSDS unit is simple to operate and easy to use. The recorder has been preset to operate at the well site "out of the box", with a few preliminary actions. Familiarize yourself with the H4 Recorder Operating Manual and the pre-operation checks provided in this manual.

2.0 Set-up



Note: Always replace the batteries before a job.



Note: Loss of battery power may lead to data loss.

2.1 Open the battery compartment cover as described on page 9 of the supplied owner's manual. Insert two new AA batteries. Close the battery compartment cover.

2.2 Turn on the recorder by moving the on/off switch on the left side of the unit to the "on" position.

2.3 Set the gain switches on the right side of the unit for INPUT 1, INPUT 2 and MIC all to H.



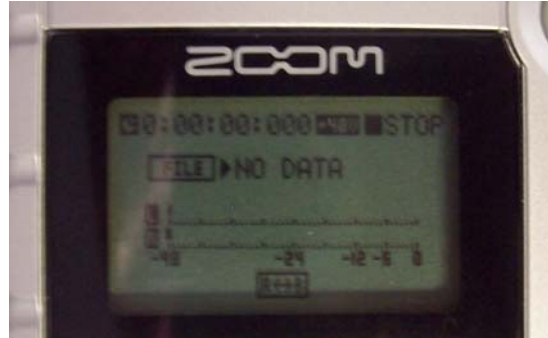
- 2.4** Press the menu button on the front of the unit to get to the MENU screen
- 2.5** Use the JOG DIAL on the right side of the unit to scroll to MODE, press the JOG DIAL in to enter the MODE menu. Using the JOG DIAL ensure that STEREO RECORDER is selected.
- 2.6** Press the menu button to go back to the main menu screen.
- 2.7** Using the JOG DIAL navigate to the RECORDING FORMAT menu screen.
- 2.8** Using the JOG DIAL, ensure the FORMAT is set to WAVE, the SAMPLE is set to 96 and the BIT is set to 24.
- 2.9** Press the menu button to go back to the main menu screen.
- 2.10** The METRONOME is not used in this application.
- 2.11** Using the JOG DIAL navigate to the DISPLAY menu screen. The default settings for the DISPLAY are the CONTRAST set to 5 and the BACK LIGHT set to 15 sec. These settings can be adjusted to your preference.
- 2.12** Press the menu button to go back to the main menu screen.
- 2.13** Using the JOG DIAL navigate to the CARD menu screen. The REMAIN menu item will tell you the remaining unused disk space on the SD card. To format the SD Card select the FORMAT menu option.



Note: Formatting the SD card will erase all data and all settings. You will need to follow the setup procedure to re-setup the recorder if the SD card is formatted.

- 2.14** Press the menu button to go back to the main menu screen.

2.15 Press the MENU button again to go to the top screen which will display the current file name or NO DATA if no files have been created (as shown below).



2.16 Press the bottom side of the MENU button to access the INPUT MENU.

2.17 Using the JOG DIAL Ensure the SOURCE is set to IN1 and 2.

2.18 Using the JOG DIAL Ensure the LEVEL of both INPUT 1 and 2 are set to the maximum of 127. Press the MENU button to get back to the INPUT MENU screen.

2.19 Using the JOG DIAL Ensure the PHANTOM is set to +48V, the Monitor is ON, the AUTO GAIN is OFF and the COMP/LIMIT is OFF.

2.20 Press the MENU button to return to the top screen.

2.21 Turn off the Recorder.



Note: The recorder can also be run off of AC power with the supplied plug-in adapter.

2.22 Summary of Default Settings recommended for this application:

- Physical Gain Switches: H
- Mode: Stereo Recorder
- Recording Format
- Format: WAVE
- Sample: 96
- Bit: 24
- Metronome: N/A

Digital Shot Detection System (DSDS)

- Display
- Contrast: 5
- Back Light: 15 sec
- Input Menu
- Source: IN1 and 2
- Level: 127 (max for both)
- Phantom: +48V
- Monitor: ON
- Auto Gain: OFF
- Comp/Limit: OFF

3.0 Connecting the Recorder to the MIC

3.1 Insert the female end of the 25 ft MIC Cable (lettering facing up), into the MIC Power Unit.



3.2 Check that the switch on the MIC Power Unit is in the "ON" position and all the way up as far as possible



Note: For the DSDS System operation it is not necessary for the MIC Power Unit to have a battery installed.



4.0 Connecting the MIC and Headphones to the Recorder

4.1 Insert the other end of the 25 ft MIC Cable into the right hand jack (input 2), on the bottom of the Recorder.

4.2 Insert the male connector of the Headphones into the "**Phones**" jack on the Recorder.

5.0 Recorder Operation

5.1 Attach the Microphone Assembly to the pipe or well head securely using the Velcro Strap.

5.2 Turn on the recorder and put on the Headphones.

5.3 Check that the green 96 kHz light is on and the display is operating.

5.4 Press the Record button once, (the button will blink "red") this is record stand-by mode to check recording levels (refer to the H4 Recorder owner's manual on how to change recording levels).

5.5 When you are satisfied with the recording levels, press the "**Record**" button again. This will start the recording to a digital file.

5.6 When recording is complete, press the "**Record**" button once again and the recording will stop.

5.7 To listen to your recording, toggle the Menu button **up** (do not press the button down). Toggle the Menu Button **up** once again and the recording will stop.

6.0 Create a Job Record CD

6.1 To create a Job Record by transferring data onto a CD, refer to the H4 Recorder owner's manual for managing recorded files.

