

## **EASTERN DRILLING SERVICES**

## VMM\* Vibration Memory Module

| VMM Specification                                    |  |
|--|--|
| Physical Parameters                                  |  |
| Length (directional sensor + VMM) 69.8in. (1,773 mm) |  |
| 15.8 in. (401 mm) longer than standard MWD sensor    |  |
| Outside Diameter 1.875 in. (48 mm)                   |  |
| Measurement  |  |
| Measurement Devices 4 ± 250 g Accelerometers         |  |
| Data Sampling Rate                                   | 1,000samples/s                                 |
| Real-Time Telemetry                                  | Configurable at rig site                       |
| Memory Size  | 8 MB   |
| Memory Recording                                     | Average and peak data stored every 4 seconds;  |
|  | 40 seconds of raw data samples stored at 1,000 |
|  | Threshold                                      |
|  | samples/sec. when each is first crossed        |
| Data Recorded:                                       |  |
| VibrationMax. Lateral                                | 0to354g  |
| RMSLateral Vibration                                 | 0to354g  |
| VibrationMax. Axial                                  | 0 to 250 g                                     |
| RMSAxial Vibration                                   | 0 to 250 g                                     |
| Memory Dump  | Connect o sondeoprogram and dump memory        |
| Environmental  |  |
| Operating Temperature                                | 0? to 347?F (0? to 175?C)                      |
| Pressure   | 20,000 psi (138 MPa)                           |
| Shock  | 500 g, 1 ms, 5,000 shocks per axis             |
| Vibration  | 25 g RMS, 20 - 500 Hz bandwidth                |