

MWD SPECIFICATIONS

Surface Systems

PC Software Suite

Operating System	Minimum Windows 2000, Windows XP Recommended
Memory	Minimum 256 MB, 512 MB Recommended
Processor	Minimum Pentium 1.2 GHz. Dual Core Recommended
Disk Space	Minimum 100 MB disk space 10 GB recommended (for surface data logging)
Ports	Ethernet Port Required. Serial Port Optional (allow WITS output from PC)
Included Utilities	Real-Time Data Display, Configuration Utility, Roll Test, Memory Access.
Software Licences	Comes with the System

Receiver

Power	85-264 V AC input, 47-63 Hz, 60 W UPS Recommended
Dimensions	20" X 17" X 11", 31 lbs. (BTR-C) 14 1/8" X 5 1/8" X 9", 16 lbs. (BTR)

Rig Floor Display

Voltage	14 V DC Input minimum @ 40mA, ISB recommended
Dimensions	13 7/8" X 10" X 2 1/4", 11 lbs.
RD-S	Class 1, Div 2 (Pending Cert), With the feature of RD-G
RD-GTouchScreen Display	Class 1, Div 2 with TouchScreen Option, Full Color Graphics Display

Transducer

Type	GP: 50 Hammer Union
Pressure Range	0-10,000 psi (6K to 15K optional available)
Power	4-20 mA, Loop Powered
Operating Temperature	-40°F to +176°F (-40°C to +80°C)
Dimensions	Approximately 3" diameter X 6" OAL

High Performance Cable

Type	Length
Yard Cable	350 ft.
Y-Cable	3 ft.
Programming Cable	75 ft.
Transducer Cable	100 ft.
Extension Cable	100 ft.
Adapter Cable	2 ft.

Downhole Systems

General

Assembly Length	25 ft. standard directional 32 ft. with second battery 37 ft. with gamma and second battery * Actual lengths depend on centralizer configurations
Outer Diameter (O.D.)	7/8" housing O.D. Used in 3.5" - 9.5" diameter non-magnetic collars
Assembly Configuration	UBHO (Muleshoe) Sub and Probe (variable configuration)
Sensors	Directional and Tool Temperature (standard) Gamma, cps (AAPI Optional) Shock, real time & memory (optional)
Power Sources	Eight "Double D" Lithium battery cells (150C rated, 175C Optional) Up to 400 hrs. per battery pack, 2 pack max (depending on Configuration)
Pulse Telemetry	Positive Mud Pulse
Programmability	Full programmability at surface. Down link Mode-Switching
Retrievable/Re-insertable	Toolstring wireline retrievable & re-insertable in vertical section
Survey Data Configuration	User - configurable data types, ordering, and resolution
Data Logging	4 MB logging memory, with up to 1000 hours (configuration dependent)

Environmental Conditions

Operation Temperature	150°C (302°F) standard maximum for battery and orientation module 175°C (347°F) all downhole assemblies
Mud Pressure	20,000 PSI maximum
Mud Flow Rate	1200 GPM maximum (8 1/4" OD collar) 50 GPM minimum (3 1/2" OD collar)
Pressure Drop Across Tool LCM	Tool configuration dependent Maximum LCM - medium nut plug 40 lb / bbl

Performance

Survey Transmission Time	50-100 sec. for typical user configurations
Toolface Updates	~15sec. Intervals (configuration dependent)
Gravity Toolface	Accuracy $\pm 0.5^\circ$
Magnetic Toolface	Accuracy $\pm 0.5^\circ$
Azimuth	Accuracy $\pm 0.25^\circ$; 3 sigma Resolution to 0.09°
Inclination	Accuracy $\pm 0.1^\circ$; 3 sigma; resolution to 0.04°
Gamma Acquisition	~20,000 cps maximum (AAPI option available)

Dimensions

(all modules 1 7/8" OD)	<i>Length</i>	<i>Weight</i>
Directional Module	79.5"	38 lbs
Pulser Module	94"	50 lbs
Gamma Module	42.4"	30 lbs
Battery Packs, ea.	69.5"	28 lbs
Interconnect module	14"	11 lbs
Fishing Neck/Program Plug	19.5"	10 lbs