

# EnSight MWD™ NEAR BIT SUB

## The EnSight™ MWD Near Bit Sub is designed to be used with the EnSight MWD Electro-Magnetic Non-Retrievable Dipole System.

The Near Bit Sub enables measurement of inclination and gamma count data approximately two feet behind the bit. Data is wirelessly transmitted around the downhole motor to the Electric Dipole System. Received data is decoded by the Electric Dipole electronics, where it is logged and periodically transmitted to the surface.

Inclination is sent continuously to the MWD system even while the drillstring is rotating, and tracks very closely with the inclination measurement in the MWD system located above.

The gamma sensor in the Near Bit Sub collects gamma counts while rotating and places this data into 1 of 8 bins. System software then tabulates the counts that correspond to top and bottom bins, and sends “up/down” or “high/low” information to the MWD System so that drilling decisions can be made in real time.

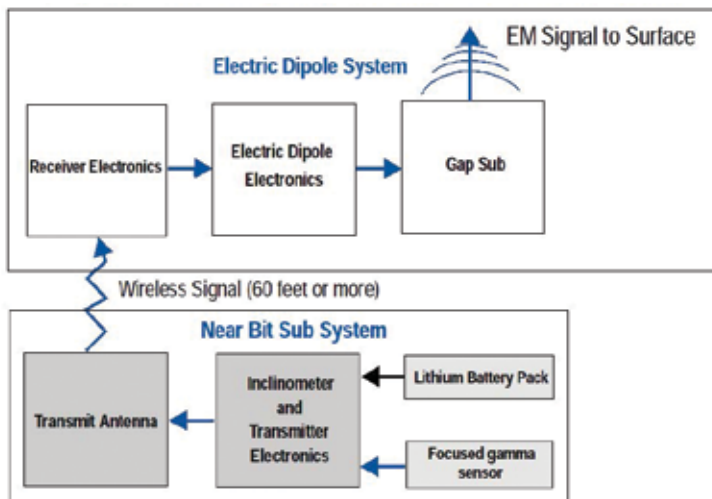
The 5” Near Bit Sub has four pockets, one each for inclinometer, gamma, transmission electronics, and battery. The 6.5” Near Bit Sub has five pockets, with the same contents as the 5” Near Bit Sub, but with an extra battery. Battery life is typically between 80 (5” Near Bit Sub) and 120 (6.5” Near Bit Sub) hours per single battery stack.

- Geo steering in tight formations and long laterals
- Collision avoidance situations

## FEATURES

- Available in two sizes: 3.5 API Regular (for use with 4.75” to 5” Mud Motors) and 4.5 API Regular (for use with 6.5” to 6.75” Mud Motors)
- Provides accurate inclination and rotation speeds at the bit, up to 250 RPM
- Azimuthal gamma ray provides clear “up” and “down” readings
- Seamless, wireless link to MWD system
- Operates exclusively with Applied Physics MWD systems

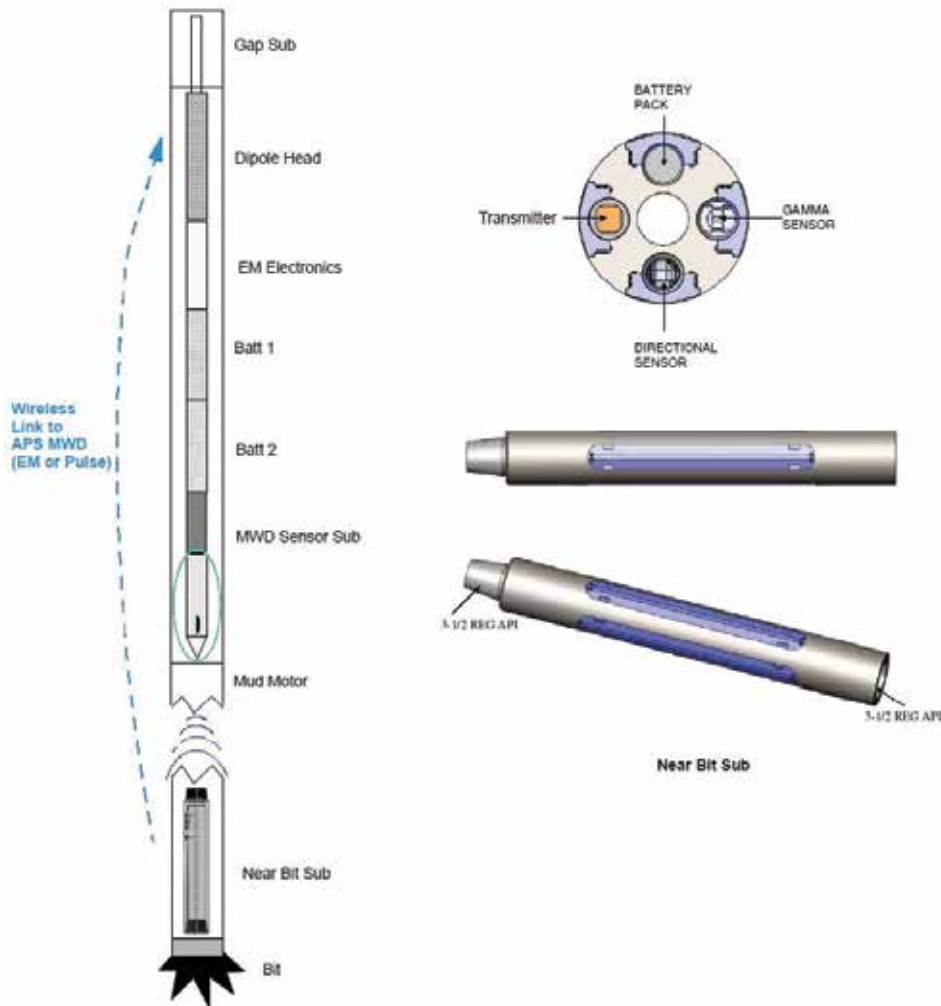
## DIAGRAM OF NEAR BIT SYSTEM USED WITH ELECTRIC DIPOLE SYSTEM



## ENSIGHT MWD NEAR BIT SUB SPECIFICATIONS

Carrier Frequency	935 Hz
Modulation Types	GMSK/FSK
Baud Rate	20 Baud
Voltage	+12 V to +24 V
Current	120 mA at 22 V input (2.64 W)
Range	60 feet or more
Physical (two versions)	5.125" Dia. x 36" Length (131 mm x 915 mm), sensor is 20 cm back from bit 7.25" Dia. x 36" Length (184.15 mm x 915 mm), sensor is 40 cm back from bit
Threading (two versions)	5.125" : 3.5 API Regular 7.25" : 4.5 API Regular

### ENSIGHT NEAR BIT SUB AND WIRELESS COMMUNICATION SYSTEM



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