

# XBOLT G2 ACCELERATED DRILLING SERVICE

Eliminates survey wait time and enables switching between telemetry modes in less than one minute

## TEMPERATURE

Up to 329 degF [165 degC]

## DATA TRANSMISSION SPEED:

Up to four times faster than conventional rates

## TELEMETRY OPTIONS:

Dual, electromagnetic (EM), or mud pulse

## WHERE IT IS USED

- Land performance drilling
- Pad and batch drilling operations
- Horizontal wells with long lateral sections

## HOW IT IMPROVES WELLS

Reduces or completely eliminates surveying time, increases high-speed communication rates, and enables switching between EM, mud pulse, and dual telemetry modes to deliver wells faster and with optimal positioning.

## HOW IT WORKS

The xBolt G2\* accelerated drilling service uses total and azimuthal image gamma ray functionality to reveal bed crossings and boundaries, enabling confident geosteering decisions and subsurface model refinement while drilling. With better imaging, operators experience improved steering and minimized sliding for increased ROP and reduced well positioning, resulting in a smoother, less tortuous well profile. By revealing formation dips while drilling, the xBolt G2 service enables increased footage per day and improved well placement accuracy.

The xBolt G2 service is available in three hardware configurations to provide multiple data transmission options in a single platform. Operators can leverage high-speed EM telemetry in signal-friendly zones, robust mud pulse telemetry at deeper intervals, or either mode in a dual-telemetry configuration. Switching between telemetry modes is accomplished in less than a minute, avoiding costly trips out of hole and lost rig time.

The fit-for-purpose multitelemetry service provides superior demodulation rates to eliminate surveying time when EM telemetry is deployed, achieving data transmission rates up to four times faster than conventional rates in both EM and mud pulse telemetry modes. The EM telemetry configuration takes surveys offline during connections, contains no moving parts, and withstands high lost circulation material concentrations without jamming. In the mud pulse telemetry configuration, the multitelemetry service enables increased data transmission rates up to 4 bits/s. The dual-telemetry configuration provides full flexibility throughout drilling by providing ultrafast EM telemetry speeds when possible and reliably accurate mud pulse telemetry transmission at deeper depths—all without the need to trip out of hole.

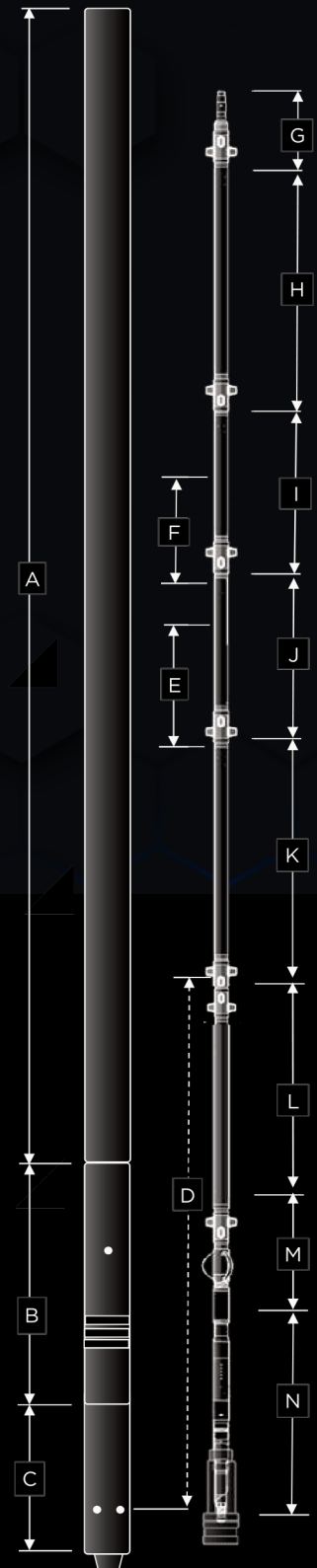
The xBolt G2 service is available in 43/4-, 63/4-, and 8-in sizes and is also usable in larger bore sizes up to 12¼ in.

## WHAT IT REPLACES

Conventional telemetry tools that use either mud pulse or EM telemetry with long downlinking times.

## THE TAKEAWAYS

The xBolt G2 service provides ultrafast EM telemetry and accurate mud pulse transmissions at deeper depths—and a combination of the two—without having to pull out of hole. In addition, the xBolt G2 service eliminates surveying down times because it takes surveys during connections.



## MECHANICAL SPECIFICATIONS

Tool OD, in [cm]	4.75 [12.1]	6.50 [16.5]	8.00 [20.3]
Maximum OD, in [cm]	4.80 [12.2]	7.00 [17.8]	8.12 [20.6]
Tool ID, in [cm]	2.69 [6.8]	2.81 [7.1] or 3.25 [8.3]	3.25 [8.3] or 3.50 [8.9]
Maximum dogleg severity (DLS) at 150 degC [302 degF] (DT/EM rotating, slick), °/100 ft	15	10	8
Maximum dogleg at 150 degC [302 degF] (DT/EM sliding, slick), °/100 ft	30	20	16
Maximum dogleg at 150 degC [302 degF] (DT/EM rotating, flex), °/100 ft	25	15	13
Maximum dogleg at 150 degC [302 degF] (DT/EM sliding, flex), °/100 ft	30	30	26
Maximum compression, lbm [kg]	100,000 [45,360]	200,000 [90,720]	300,000 [136,080]
Maximum tension, lbm [kg]	500,000 [226,800]	1,000,000 [453,600]	1,200,000 [544,300]
Maximum torque at bit, ft.lbf [N.m]	9,400 [12,745]	26,000 [35,250]	39,000 [52,875]
Maximum electronics temperature†, degF [degC]	330 [165]	330 [165]	330 [165]
Maximum external pressure, psi [MPa]	20,000 [137.8]	20,000 [137.8]	20,000 [137.8]
Flow range, galUS/min [L/min]	125 to 375 [473 to 1,419]	250 to 750 [946 to 2,839]	250 to 900 [946 to 3,406]
Direction and inclination distance from tool bottom, ft [m]	5.72 [1.74]	5.72 [1.74]	5.72 [1.74]
Azimuthal gamma ray distance from tool bottom, ft [m]	2.08 [0.63]	2.08 [0.63]	2.08 [0.63]
Lost circulation material tolerance, lbm/bbl [kg/m3]	Medium nut plug, 40 [114]	Medium nut plug, 40 [114]	Medium nut plug, 40 [114]

## TELEMETRY

Maximum data transmission rate (EM), bits/s	16
Maximum data transmission rate (mud pulse), bits/s	4
Maximum data transmission rate (dual telemetry), bits/s	16 on EM, 4 on mud pulse
Downlink method, EM	EM, rpm, or flow
Downlink method, mud pulse	rpm or flow
Downlink method, dual telemetry	EM, rpm, or flow

† Value dependent on application-bit, BHA, parameters, formation type, etc

‡ Maximum at 0-ft.lbf torque on bit; bit recommendations should be considered.

§ Maximum at 0-lbf weight on bit.

†† Dependent on mud density.

§§ Special configuration available for silicate muds.

††† Depends on the type of LCM.

‡‡‡ Alternative LCM configuration available (up to 120 lbm/bbl).

§§§ Sensor offsets and tool weight vary depending on hole size configuration.

†††† High pressure configuration available up to 35,000 psi.

## DIRECTIONAL SENSOR

Measurement	Accuracy	Resolution
Azimuth at inclination greater than 6, °	±1.0	0.1
Azimuth at inclination of 3, °	±2.0	0.1
Inclination, °	±0.15	0.1
Toolface at inclination greater than 6, °	±1.5	1.5
Toolface at inclination of 3, °	±3.0	1.5
Magnetic field strength (0.1–65 uT)	±0.2	0.1
Dip angle of –90–90, °	±0.3	0.1

## GAMMA RAY (AVERAGE AND QUADRANT)

Detector type	Nal scintillation
Range, gAPI	0 to 1,200
Accuracy, %	±5
Repeatability, %	±5‡

† Gap subs rated to 302 degF [150 degC] at DLS limitations specified.

‡ Repeatability in a standard 100-gAPI shale (2% potassium, 12 parts-per-million thorium, 6 parts-per-million uranium) with 18-s averaging.