

# Mudlink™ High Speed Telemetry Upgrade



The Vertex Mudlink™ tool is a probe based, retrievable, mud pulse system capable of operating at 4 to 5 bits per second, and not limited to depth. Our upgrade kit converts your tools to the Mudlink protocol. This will upgrade your current data rate from less than 1 bit per second to Mudlinks 4 to 5 per second. Completely removes the limitations that exist for these older generation tools.

### Advantages

- New technology supports up to 0.15 second pulse width.
- Reliability; patent pending PCB board mounting. Makes boards impervious to shock and vibration.
- Real time shock, vibration and RPM.
- Full memory capabilities, with graphical interface
- Patented Mudlink dual digitizer decoding. Advanced syncing, pulse detection and error checking.
- Includes gamma and resistivity logging software
- Dynamic telemetry – telemetry switches automatically between rotating and sliding; no need to program check points in telemetry sequence.
- Re-sync on rotary, no need to recycle pumps.
- Drilling dynamics – plot all EDR data with calculated and decoded data.
- Flowswitch or rotary downloading; 49 options.

### Pulse Positioning Method

### Pulse Widths Showing True Bits Per Second

	1.2	1	0.8	0.6	0.5	0.375	0.25	0.15	0.125
M-ary Pulse (Tensor based tools)	0.3	0.5	0.7	0.9	X	X	X	X	X
Mudlink	0.36	0.6	0.86	1.08	1.2	1.8	2.4	4.0	4.80

- excellent decoding capabilities, 95% or better
- limited decoding, 70% or better, limited to depth, limited pulse tracking
- does not work

### Tools vs. depth

### Bit rate vs. Depth: true bits per second (based on industry feedback)

	2,000	4,000	6,000	8,000	10,000	12,000	14,000	16,000	18,000	20,000
M-ary Pulse (Tensor based tools) Max bitrate	0.9	0.9	0.7	0.7	0.7	0.7	0.5	0.5	0.5	0.3
Dual telemetry tools	12.0	10.0	8.0	4.0	0.7	0.7	0.7	0.7	0.7	0.5
Mudlink mud pulse only	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	2.4	2.4

### Estimated cost to operate (based on industry feedback)

	Bit rate	Cost per day
M-ary Pulse Legacy systems (Tensor based probe tools) Max bitrate	0.9 bits/sec	\$ 240
Dual telemetry tools	8 bits/sec	\$ 2,000 +
Mudlink mud pulse only	4 bits /sec	\$ 340





# Mudlink™ High Speed Telemetry Upgrade

Upgrade Per Kit 2 Strings



## Downhole Components Upgrade

ITEM	PART #	DESCRIPTION	UNITS	PRICE	TOTAL
1	343391	Mudlink X-Over Pulser	2	\$35,000.00	\$70,000.00
2	343401	Mudlink Bottom End	2	\$2,250.00	\$4,500.00
3	153361	Large Latching Muleshoe w/ full carbide sleeve	2	\$1,650.00	\$3,300.00
4	156471	1.145 Carbide Poppet Tip	1	\$90.00	\$90.00
5	156481	1.160 Carbide Poppet Tip	1	\$90.00	\$90.00
6	154146	1.25 Carbide Bottom Sleeve Orifice	1	\$400.00	\$400.00
7	154141	1.28 Carbide Bottom Sleeve Orifice	1	\$400.00	\$400.00
					<b>\$78,780.00</b>

Note: must use the locking muleshoe to achieve higher data rates

Trade in of old pulser required for new Mudlink X-over pulser discount pricing

## Surface System Upgrade with Mudlink Highspeed Decoding



ITEM	PART #	DESCRIPTION	UNITS	PRICE	TOTAL
8	340911	19" Mudlink Dual Digitizer Decoder (MLD)	2	\$25,000.00	\$50,000.00
9	340951	IHUB Command with software & MicroHard	2	\$5,750.00	\$11,500.00
10	411251	Transducer Y Cable	2	\$500.00	\$1,000.00
11	410441	100ft Transducer Cable	2	\$800.00	\$1,600.00
12	410443	300ft Transducer Cable	2	\$1,500.00	\$3,000.00
13	340981	Tool Programming / Testing Kit	2	\$2,500.00	\$5,000.00
<b>ALL PRICING IN USD</b>					<b>\$72,100.00</b>

Trade in Required for these prices

Tool Programming Kit requires trade in of existing Programming cable for modification. Uses lines 9 and 10.

System requires 2 additional functioning Pressure Transducers with matching connectors.

Existing transducer cables can be reworked, and system laptops have minimum requirements.

**Total Upgrade Cost \$150,880.00**

For more information about our System Upgrade, or our other quality products, contact Quentin Paré at 1-587-349-5468 or email [qpare@vertexdownhole.com](mailto:qpare@vertexdownhole.com)

