

Appendix A

Motion Decoupled Hydraulic Delivery System (MDHDS)

The Multi-function Telemetry Module (MFTM) is designed to collect telemetry from a third party tool and in this application it will be monitoring data from either the T2P or the SET-P dedicated run down-hole logging tools. This system consists of the following components:

1. T2P or SET-P tool
2. MDHDS
3. Electrical Release System (ERS)
4. MFTM
5. Telemetry Surface Control Panel (TSCP)

Figure 1 shows the basic configuration of the system without the MDHDS.

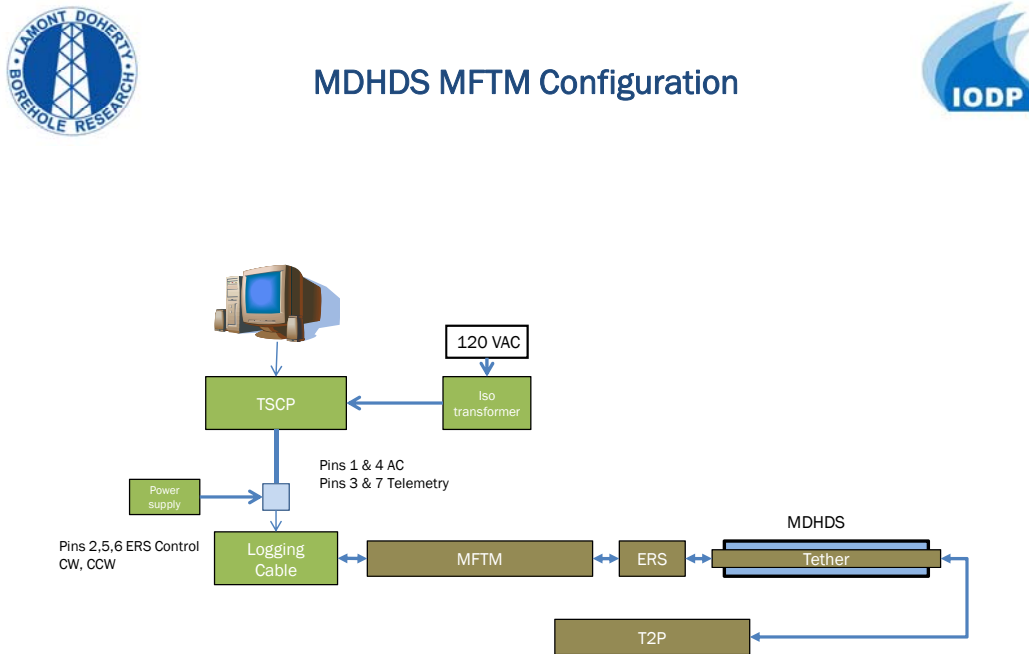
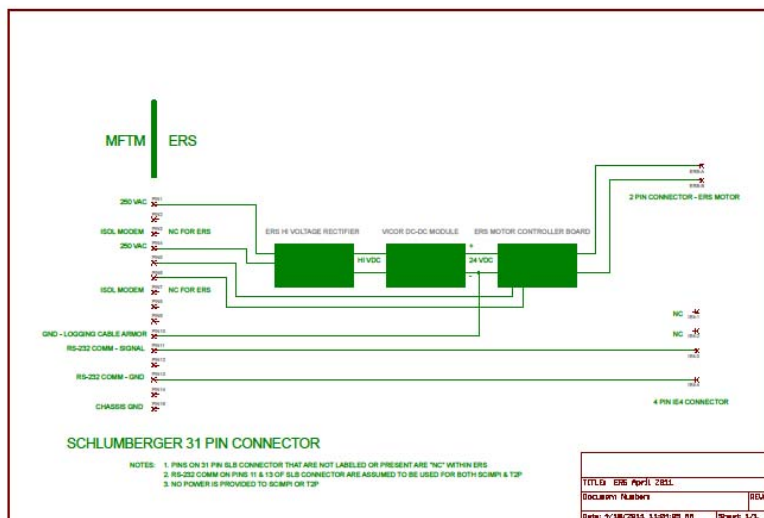


Fig 1

There are two communication paths in this configuration; one from the third party tool to the MFTM and the second from the MFTM to the TSCP. The third party tool transmits data at a one second rate over a RS232 connection configured as 9,600 baud, 8 data bits, 1 stop bit, and no parity. The connection is made over a tether that uses a RG142 50 ohm coaxial cable. Since there is no mechanical connection between the third party tool and the MFTM chassis the shield is ground (SLB pin 13) and the center conductor is transmit (SLB pin 11). The baud rate is configured within the Netburner firmware located in the Sub_Surface_Comm_handler. The TSCP outputs RS232 connection configured as 115,200 baud, 8 data bits, 1 stop bit and no parity. This connection is a DB9 connector located on the back panel of the TSCP.



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Dip Switch configuration

The Dip-switch's on the MFTM Communication board will control the operational mode that the Communication's board will boot up in. A one (1) denotes the on position.

1. Normal mode (MGT,MSS,ELIC)
2. Switch 1 (Tool power supply off J2[36])
3. Switch 2 (No MGT)
4. Switch 3 (No MSS)
5. Switch 6,5,4 (Diagnostics mode view as binary)
 - a. 000 (MODE_NORMAL)
 - b. 001 (MODE_CHARGEN)
 - c. 010 (MODE_LOOPBACK_ELIC)
 - d. 011 (MODE_LOOPBACK_TOOLBUS)
 - e. 100 (MODE_LOOPBACK_MGT)
 - f. 101 (N/A)
 - g. 110 (N/A)

- h. 111 (MODE_MDHDS)
- 6. Switch 7 (isUseDHCP)
 - a. This is commented out in user main.
- 7. Switch 8 (isWaitForReset)
 - a. Also known as "safe boot" mode

Dip switch settings for MODE_MDHDS

1. 11111100

This dip switch configuration is defined as:

- a) Tool power supply off (24 VDC Vicor supply)
- b) No MGT
- c) No MSS
- d) Switch 4,5,6 MDHDS Mode
- e) Use static IP 10.0.0.75
- f) No WaitForReset

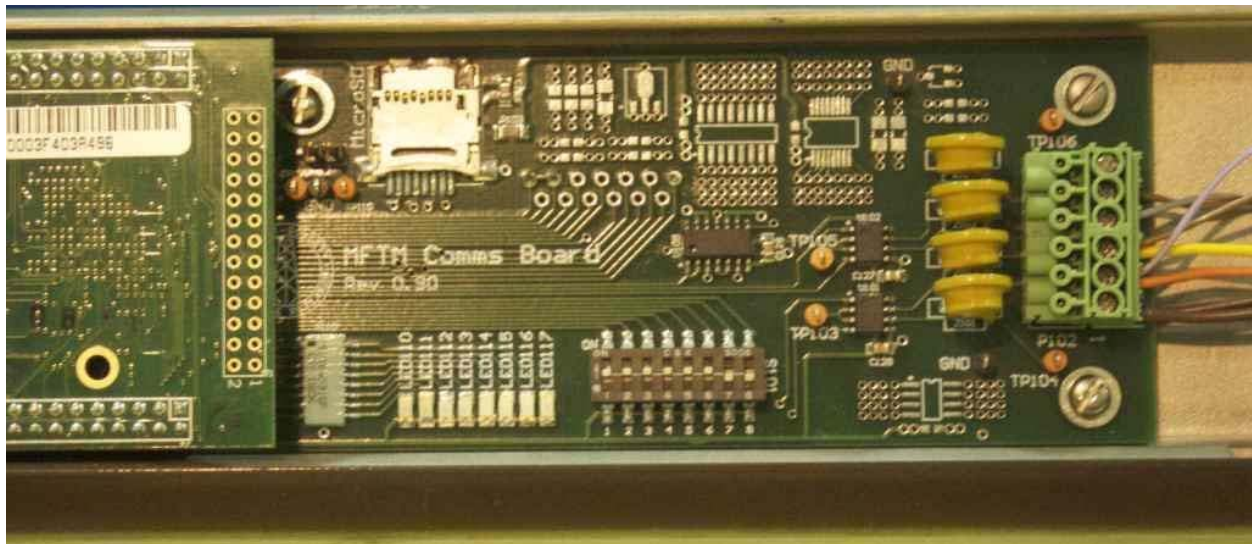


Fig 3. Dip Switch Settings

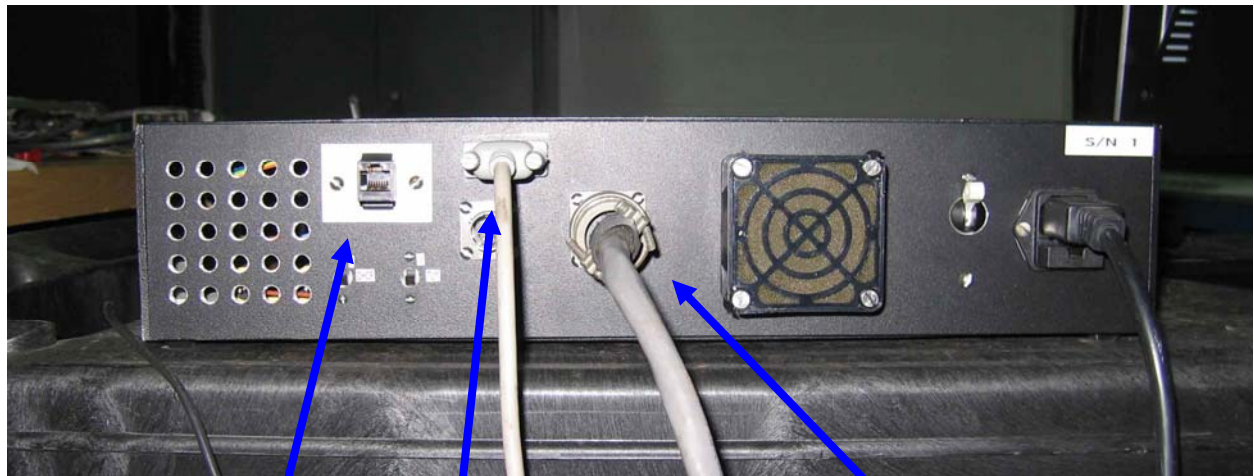


Telemetry Surface Control Panel (TSCP)

TSCP Power

Downhole Power

iDSL link active



TSCP Back Panel

Programming Connection

RS232

Breakout Box Connection



Telemetry Surface Breakout Box and Cable

Operation

- Layout the MFTM on the bench and remove the electronics from the pressure housing. Insure that the dipswitch setting is configured for MDHDS. MDHDS dipswitch configuration is 11111100 where a 1 indicates on. Refer to fig 3. This step should be performed prior to shipping of the MFTM.
- On the back panel of the TSCP connect the surface breakout box. This is an 8-pin cannon connector.
- On the breakout box, connect the jumper cable, which has a cannon connector on one end and 8 - 2 mm banana plugs on the other.
- Connect the 2 mm banana plugs to the SLB logging cable interface.
- Connect the surface PC via the RS232 com port to the TSCP. The surface PC should have the T2P logging program (T2P Data Read) installed. This is a LabView program developed using LabView version 8.2.
- Assemble the SLB Cable Head – MFTM – ERS
- Connect the main power (120 VAC) from the isolation transformer to the TSCP and connect the isolation transformer to the power mains.



MDHDS-T2P MFTM Control Panel

Software

The program was written in LabView 8.2 and incorporates the following functions:

1. Writes the data to two different files Main and backup files.
2. Outputs the data stream on a second COM port.
3. Plots internal temperature and battery voltage.
4. Plots probe temperature, Tip pressure and shaft pressure.
5. Allows for scaling ADC outputs of probe temperature, Tip pressure and shaft pressure.

Caution:

When using this system be aware that it will supply 250 VAC downhole. After assembling the system have the Schlumberger engineer check all connections before turning on power.