APPLICATION NOTE NO. 78   **September 2005**

# Inductive Modem Module (IMM) *Quick Start* Instructions

This document assumes the user has a Sea-Bird Electronics Surface Inductive Modem (SIM) with tone detect and an Inductive Cable Coupler (ICC).
The IMM is shipped in Configuration Mode 7, ready to connect to a PC with a terminal program.

1. Connect the PC serial cable and IMM Test Coupler to the IMM at J1 and J2.

2. Connect the PC serial cable to a PC serial port. Run SEATERM or another terminal program. If using SEATERM, select Configure/SBE 37, and on the COM Settings tab select RS-232 mode. Select the appropriate COM port at 9600 baud, 8 bits, no parity, 1 stop bit. Select no flow control if using a terminal program other than SEATERM.
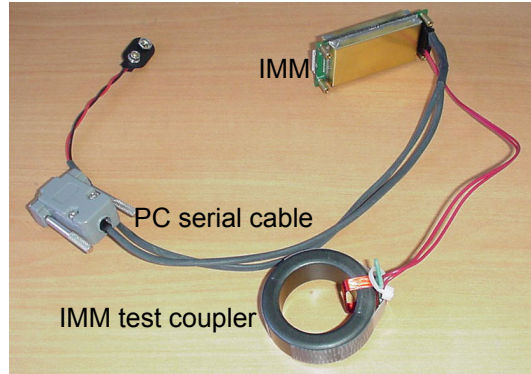
3. Apply power to the SIM and connect it to a different PC serial port. Run SEATERM or another terminal program. If using SEATERM, select Configure/SBE 37, and on the COM Settings tab select RS-232 mode. Select the appropriate COM port at 9600 baud, 8 bits, no parity, 1 stop bit. Select no flow control if using a terminal program other than SEATERM. The terminal program displays an S> prompt when you press Enter.

4. Connect the SIM's Inductive Cable Coupler (ICC) to the SIM. Connect a loop of wire through the IMM Test Coupler and the ICC to simulate the Inductive Mooring Cable.
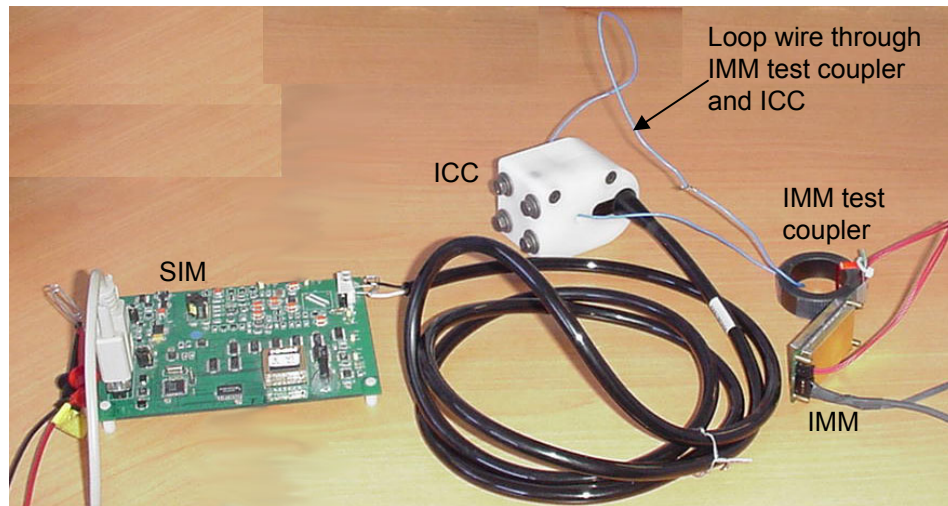
5. Connect a 9-volt battery to the IMM. The terminal program displays an IMM> prompt when you press Enter.

The test setup is now complete. The remaining instructions are an introduction to IMM operation.

Note: Commands are not case sensitive.

6. The IMM cannot communicate with the Inductive Mooring and the Host at the same time[1]. The terminal program with the IMM> prompt serves as host in this setup. When power is applied to the IMM, the IMM immediately sends a prompt to the Host[2]. At the IMM> prompt, type **PWROFF** and press Enter. This terminates the host service and allows the IMM to respond to commands from the Inductive Mooring Cable.

7. The SIM does not transmit to the IM line until it receives the **PWRON** command. At the S> prompt, type **PWRON** and press Enter to start transmitting. The IMM automatically detects the signal from the SIM and starts listening to the IM line.

8. At the S> prompt, type **ID?** and press Enter. The IMM responds via the IM line.

9. The IMM Device ID should be 00. At the S> prompt, type **!00GETSD** and press Enter to send the status command (get Status Data). Similar commands are **GETHD** (get Hardware Data) and **GETCD** (get Configuration Data).

10. In addition to its ID, the IMM may be addressed by its serial number by inserting an S and the serial number before the command. Type **!S70000002GETSD** (where 70000002 is the IMM serial number) and press Enter. This addressing method works for all commands starting with **!** or **#**.

11. In the IMM terminal program, press Enter. The IMM> prompt returns.

12. Only one device can transmit to the IM line at a time. At the IMM> prompt, type **GETLINESTATUS** and press Enter. The IMM detects the signal from the SIM, does not attempt to transmit, and reports that the line is busy. Type **CAPTURELINE** and press Enter. The IMM again reports that the line is busy.

13. At the S> prompt, type **PWROFF** and press Enter to turn off the SIM transmitter.

14. At the IMM> prompt, type **CAPTURELINE** and press Enter. If the electrical environment is noisy, the IMM may report that the line is busy. If this happens, use **FORCECAPTURELINE** to start transmitting unconditionally.

15. At the IMM> prompt, type **TESTCABLECOUPLER** and press Enter. This checks that the cable coupler is properly installed and not damaged. This command works only when the line is captured.

16. At the IMM> prompt, type **SENDWAKEUPTONE** and press Enter. This activates the SIM's tone detect feature.

17. At the IMM> prompt, type **RELEASELINE** and press Enter. This disables the IMM transmitter. Type **PWROFF** and press Enter to put the IMM to sleep. The IMM now listens for commands from the SIM.

18. At the S> prompt, type **PWRON** and press Enter to enable the SIM transmitter.

19. At the S> prompt, type **#00TEST** and press Enter. This sends the string *TEST* to the IMM's host. The IMM sends a return character (\r) to the terminal program, waits a few moments, then sends the IMM> prompt followed by the string *TEST*. Then the IMM relays characters from the terminal program to the SIM until Enter is pressed or a timeout occurs.

20. The \r character serves hosts that require a transition on the serial line to wake-up (like most Sea-Bird RS-232 instruments). The \r character transmission may be disabled with the **SETENABLESERIALHOSTWAKEUP=0** command, and re-enabled with the **SETENABLESERIALHOSTWAKEUP=1** command. Note that the IMM requires you to enter the command twice to verify.

21. The IMM> prompt received before the *TEST* string and before any commands may be disabled with the **SETENABLEPROMPT=0** command, and re-enabled with the **SETENABLEPROMPT=1** command. Note that the IMM requires you to enter the command twice to verify.

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[1] The IMM will soon be able to send a busy signal to the host when it is processing IM commands and vice versa.
[2] This is true in the current configuration, but the Host Service on Powerup can be disabled.