

V05A OBCclosed_node

ENGINEER: _____

DATE:

COMMENTS:

REQUIREMENTS COVERED:

10,24 – Reliable OBC

all BER tests passed better than 1ppm

11,24,29 - Status & control

all ports on OBC were found to be accessible

MARS

Org: WHOI

Engr: Sonnichsen

Date: 12/08/05

V05A OBCclosed_node

Purpose of Test:

This test is performed after V05 OBCopened_node is completed. It is a final checkup of the OBC after the node is sealed up.

Required Equipment:

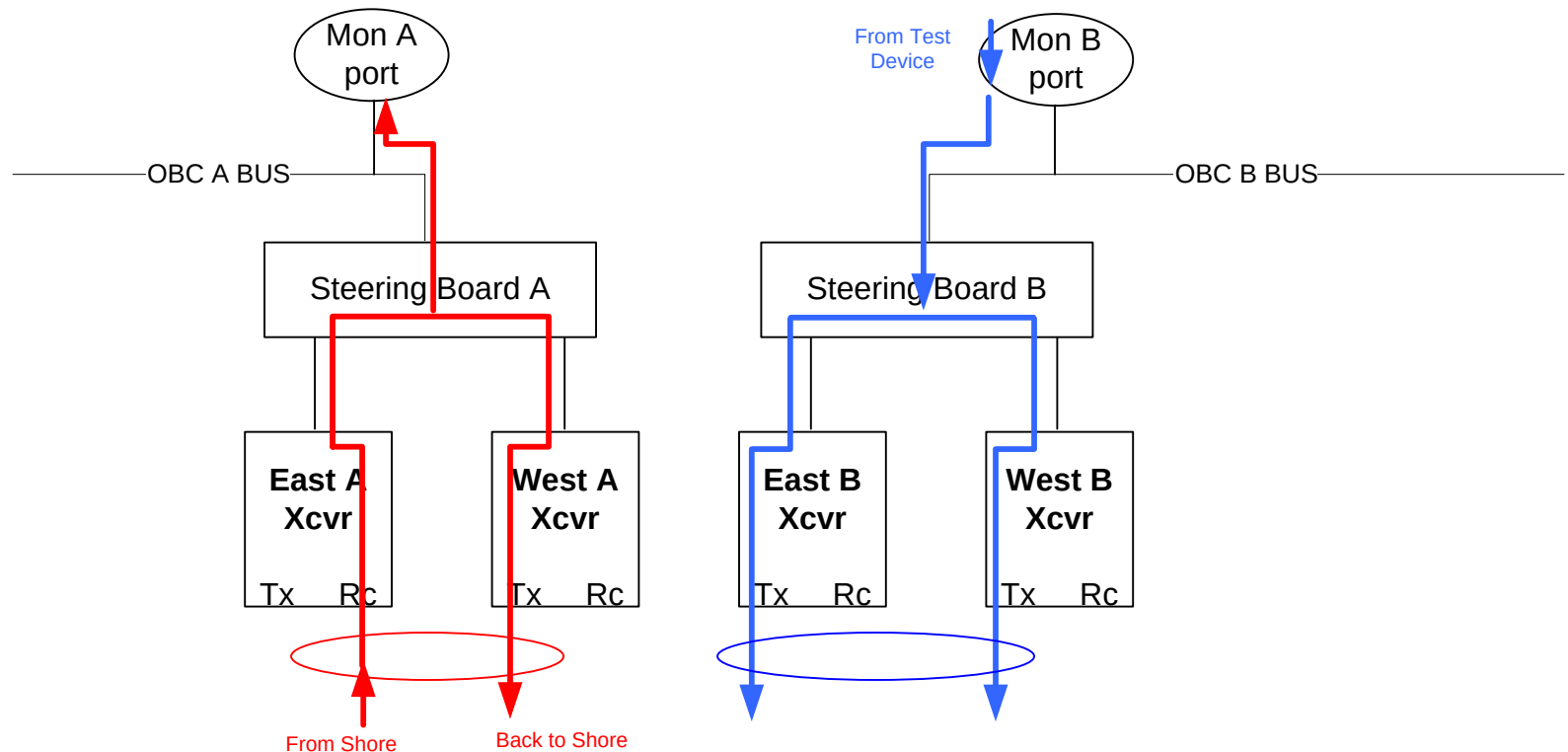
laptop with the following software:

sail.exe

9600 BER software

Optical Power meter with FC adapter and SC adapter

Shown Below is a sketch of 2 independent traffic flows showing how data propagates through the OBC transceiver system. The A and B sides are isolated. Infusing data into any port (East Rc, West Rc, or Mon) will cause data to flow out of the other ports. View the steering board as a BUS. When data enters a transceiver from the shore, it may be monitored from either the alternate transceivers of the Mon port. The former fact lends to on shore testing of the system after deployment.



V05A OBCClosed_node – Optical Power Test

Purpose of Test:

This is a final test of the OBC optical power coming from the subsea transceivers. Since the OBC transceivers of the shore unit are readily accessible after node deployment, the V05_OBCOpened_node test procedure can be used for testing the shore station.

Procedure – Sub Sea Unit:

- 1) Procure a laptop with the serial_write.exe software (see WHOI)
- 2) Attach the laptop to the serial port on the **West A** OBC shore unit.
- 3) Disconnect the **A** fiber to the Shore OBC **East** unit.
- 3) Attach an optical power meter (1550nm) to the **East A** Shore OBC Fiber
- 4) We will send the ASCII “@” symbol which is a long pulse (X'40')

Start the serial_write.exe program to start sending a constant bit stream:

```
serial_write.exe -p/dev/ttyS0 -B23 -r-1 -x -c@
```

- 5) Record the optical power in the table at the end of this document.

- 6) We will send the ASCII “U” symbol which is a square wave (X'55')

Start the serial_write.exe program to start sending a constant bit stream:

```
serial_write.exe -p/dev/ttyS0 -B23 -r-1 -x -cU
```

- 7) Record the optical power in the table at the end of this document.

- 8) Repeat the test for the following:

LAPTOP

West B

East A

East B

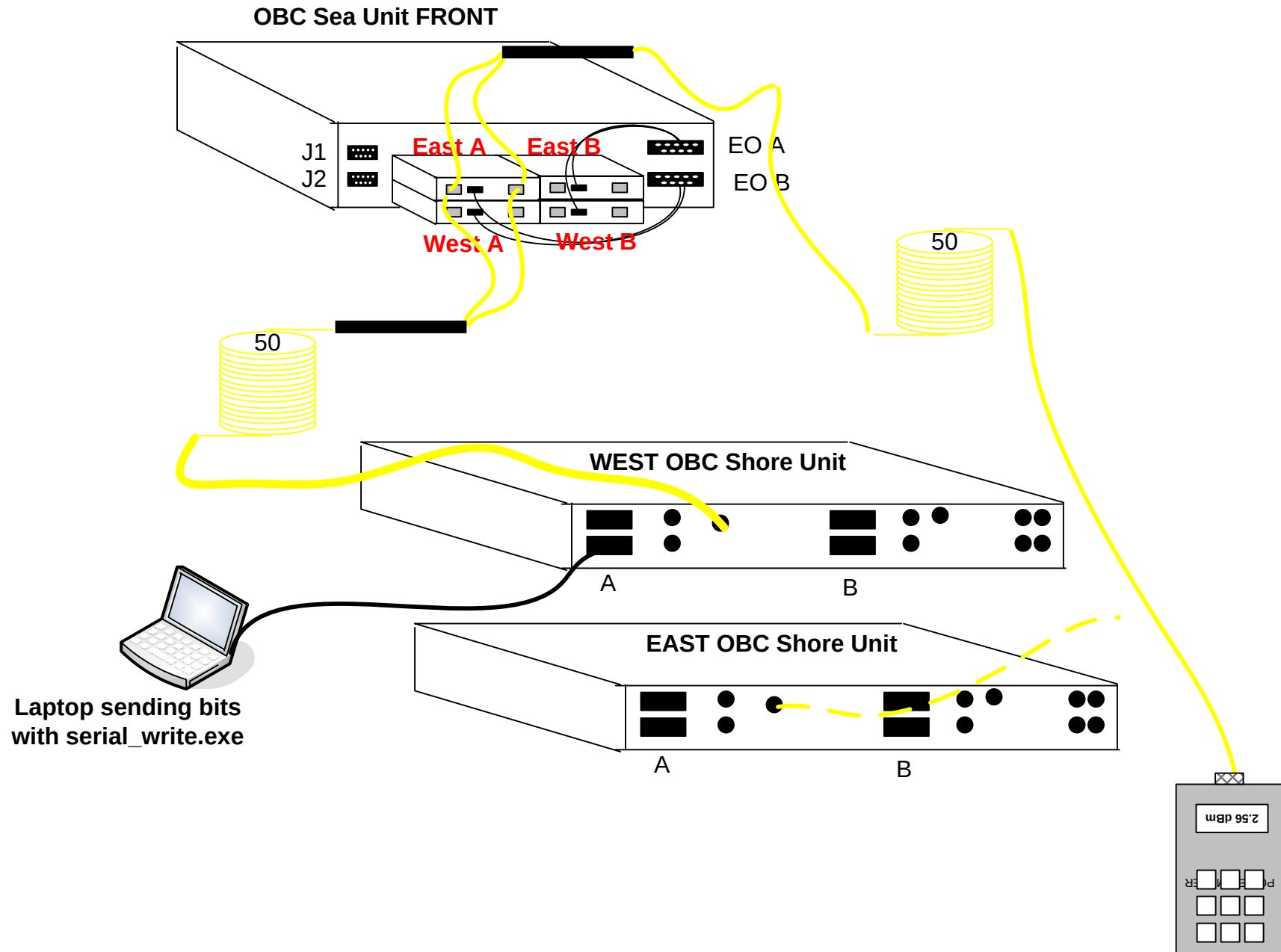
OPTICAL POWER METER

East B

West A

West B

V05A OBCclosed_node Optical Power Test



V05A OBCclosed_node – OBC Connectivity Test

Procedure

Do a final check of the connectivity of OBC to the subsea for east of the four paths (East A, East B, West A, West B)

- 1) Connect a laptop to the WEST A serial port
- 2) Establish a serial connection 8N1 from the laptop
- 3) Check the connection by issuing a “help” command to the subsea OBC unit:

###S01AH

Move the serial cable to the other 3 OBC shore ports and issue the remaining help commands.

WEST A: ###S01AH

WEST B: ###S01BH

EAST A: ###S01AH

EAST B: ###S01BH

On the marsdcs server:

- 1) logon as root
- 2) cd /webdata/MarsDCS/bin
- 3) ./mars_xbar.pl
- 4) You should see the menu:

Mars OBC/Xbar Backdoor – v1.1

x) eXit

1) N/C

2) N/C

3) CiscoA

4) CiscoB

5) EDFA-E

6) EDFA-W

7) PwrCtl

8) Loopback

Enter Xbar Port Number:

The MARS operations system will be shut down by this option so it should only be used for testing and diagnostics. Remember to restart the operations systems after this test.

SAMPLE OBC SESSION:

- 5) Select (3) CiscoA
- 6) Hit return until you get a prompt mra01-01>
- 7) Type sh clock
- 8) You should see the cisco output
- 9) <ctl>C when you are finished
- 10) Restart the MARS operations processes

V05A OBCclosed_node

Date:		Location:		Engineer:	
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Optical Power Sea	@	U
East A		
East B		
West A		
West B		