

V09 - OBC Remote Node Validation

ENGINEER: _____

DATE: _____

COMMENTS:

MARS

Org: WHOI

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Date: 03/20/05

V09 - OBC Remote Node Validation

GENERAL PROCEDURE

This test is to be performed after node deployment. This test will be divided into parts:

OBC Optical Power Test

Testing that the optical power of the OBC system

OBC Data Channel Test

Testing that the functionality of the OBC backdoor features

NOTES:

- > There is an obvious preference to perform the test with the actual MARS cable and shore station, however should physical circumstances prevent this, the test may be performed with a fiber spool or VOA (variable optical attenuator), and with a mobile test shore station.
- > If a VOA is used, set it to 15dB loss to simulate the MARS cable plus termination assemblies.> Proper fiber handling and safety techniques are assumed throughout and not further mentioned.
- > Use SM fiber for all loopbacks

OBC OPTICAL POWER CHECK

This test is done while the sea node closed. It may be deployed at the time of this test.

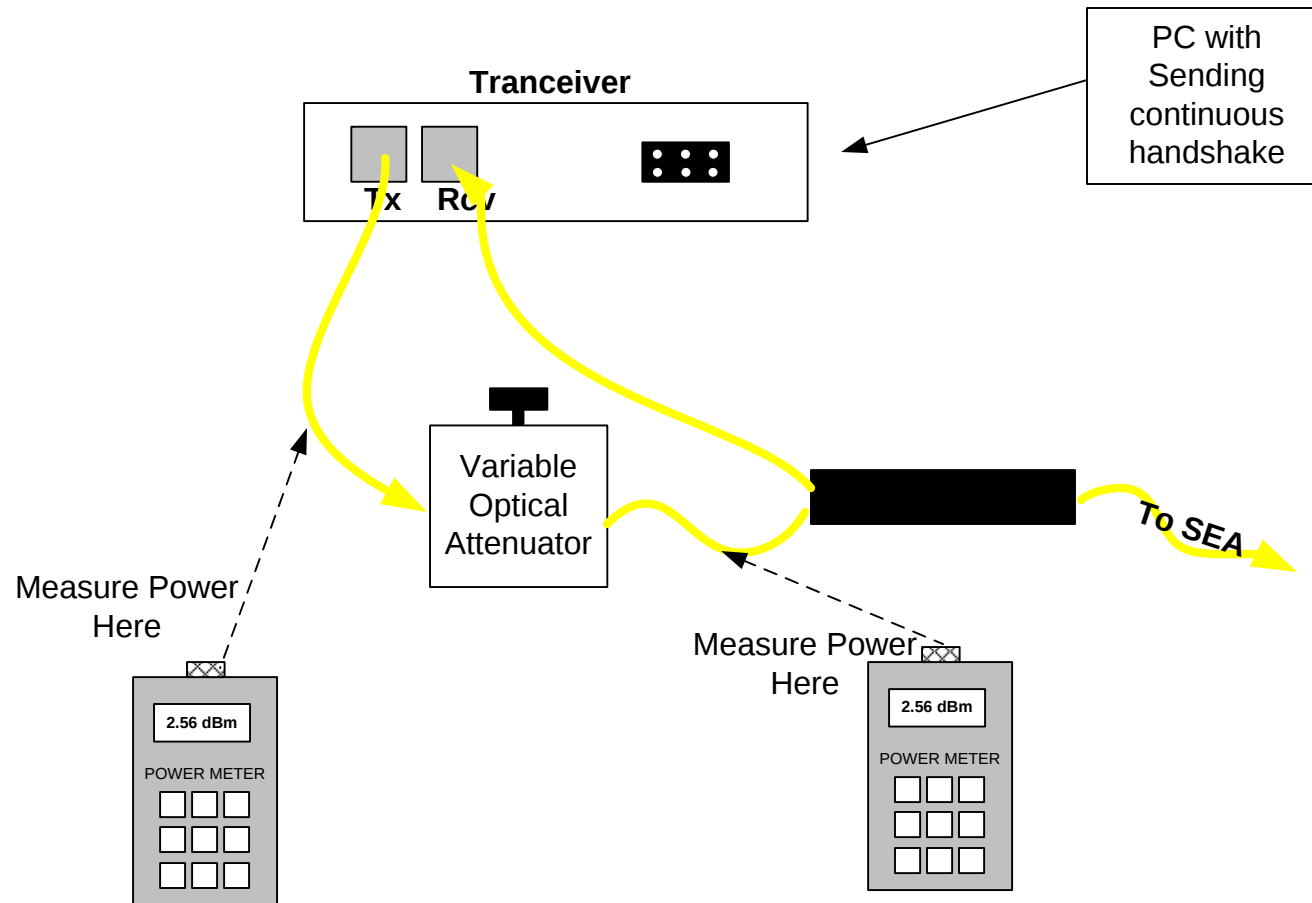
SUB SEA OBC RECEIVER SENSITIVITY

- 1) Insert a variable optical attenuator (VOA) into the OBC shore transmit port as shown in the setup diagram
- 2) From the Shore controller PC, start the OBC Power test command:
(PER STEVE LERNER)
- 3) Slowly turn up the attenuation on the VOA until the handshaking fails
- 4) Remove the receive fiber at the OBC transceiver and measure the output at 1550nm
- 5) Record the results in the results table at the end of this document.
- 6) Repeat the test for all transceivers (East A, East B, West A, West B)

SUB SEA OBC TRANSMITTER OUTPUT POWER

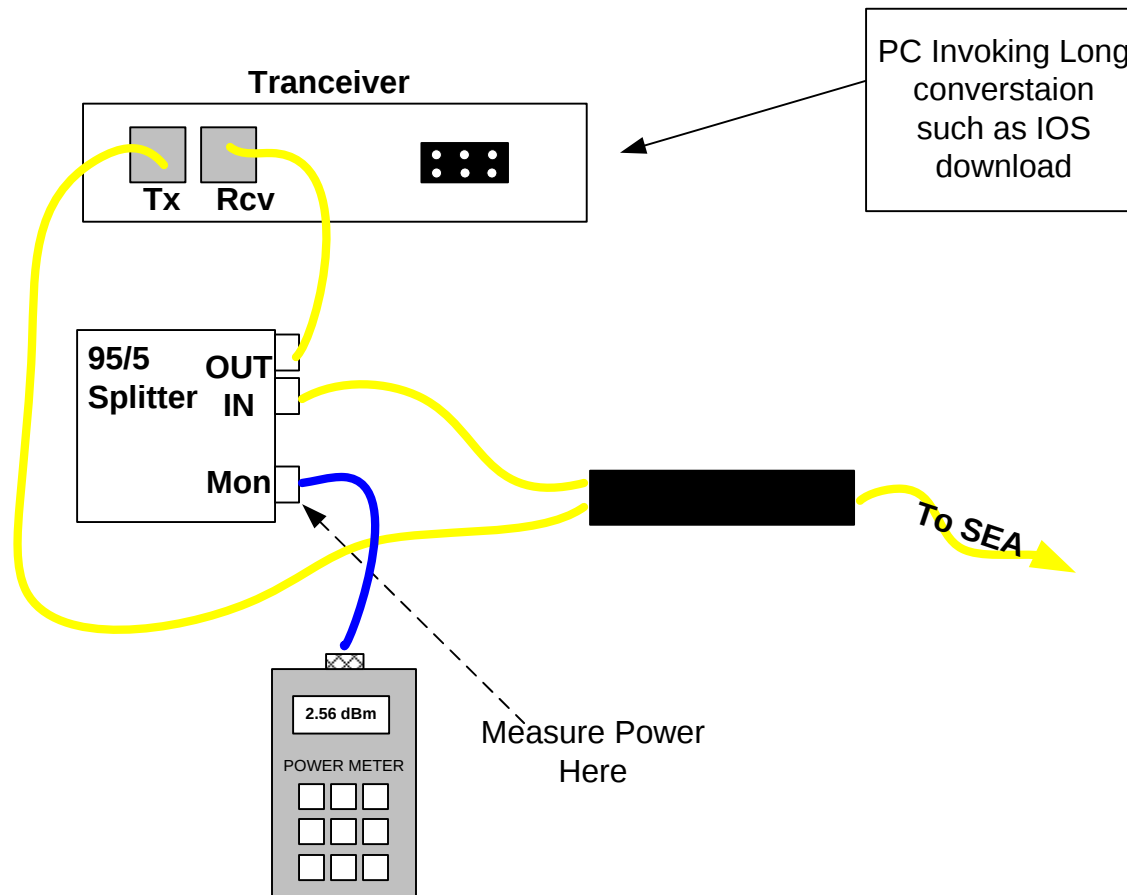
- 1) Insert a 5/95 optical splitter into the OBC shore receive port as shown in the setup diagram
- 2) From the Shore controller PC, start the OBC Power test command:
(PER STEVE LERNER)
- 3) Measure the power at the monitor port using an optical power meter set at 1550nm
- 4) Record the results in the table at the end of this document
- 5) Repeat the test for all transceivers (East A, East B, West A, West B)

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Setup To Test OBC Receiver Sensitivity

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**Setup To Test OBC Sub Sea
Transmitter Output Power**

Prodedure 2: OBC Data Channel Test

You must use the shore station OBC computer for this test. In this test you will access the sub sea routers and EDFAa via their backdoors using the OBC system and check that you can communicate with them by sending some commands.

To test the EDFA's:

AD FFFF 1234

At prompt type AS

To test the routers simply hit return and type a question mark.

BACKDOOR TEST VIA OUT OF BAND SERIAL SYSTEM

Connect via SAIL bus A East and check connectivity o the following sub sea devices.

CISCO A: sail -p/dev/ttyS0 -s#S01A -x2

CISCO B: sail -p/dev/ttyS0 -s#S01A -x3

EDFA East: sail -p/dev/ttyS0 -s#S01A -x4

EDFA West: sail -p/dev/ttyS0 -s#S01A -x5

Repeat this test for SAIL bus B East:

CISCO A: sail -p/dev/ttyS1 -s#S01B -x3

CISCO B: sail -p/dev/ttyS1 -s#S01B -x3

EDFA East: sail -p/dev/ttyS1 -s#S01B -x4

EDFA West: sail -p/dev/ttyS1 -s#S01B -x5

BACK DOOR TEST VIA IN BAND ETHERNET SYSTEM

Plug a PC into either shore CISCO and bring up brows
access cyclades NODE COMMUNICATIONS
CONTROLLER vvia //HTTP://x.x.x.x/????

Use the menus to connect to the following devices:

Access Crossbar Mux Port 2 CISCO A

Hit return until prompt

Type a ?

Access Crossbar Mux Port 3 CISCO B

Hit return until prompt

Type a ?

Access Crossbar Mux Port 4 EDFA East

AD FFFF 1234

At prompt type AS

Access Crossbar Mux Port 5 EDFA West

AD FFFF 1234

At prompt type AS

Access Crossbar Mux Port 6 Node Power Controller

Hit return until prompt

Enter Username and Password

Access voltages and temperatures

CHECKING POWER CONTROLLER

Plug a PC into either *shore* CISCO and bring up browser
Access cyclades via //HTTP://x.x.x.x/obc_xbar
Use the menus to connect to the power controller.

Power OFF CISCO Router A
Access Crossbar Mux Port 2 CISCO A
You should not be able to access the router
Switch back into the Power controller
Power ON CISCO Router A and give it time to reboot (5min)
Access Crossbar Mux Port 2 CISCO A
You should be able to access the router

Log into the Power Controller
Power OFF CISCO Router B
Access Crossbar Mux Port 3 CISCO B
You should not be able to access the router
Log back into the Power controller
Power ON CISCO Router A and give it time to reboot (5min)
Access Crossbar Mux Port 3 CISCO B
You should be able to access the router

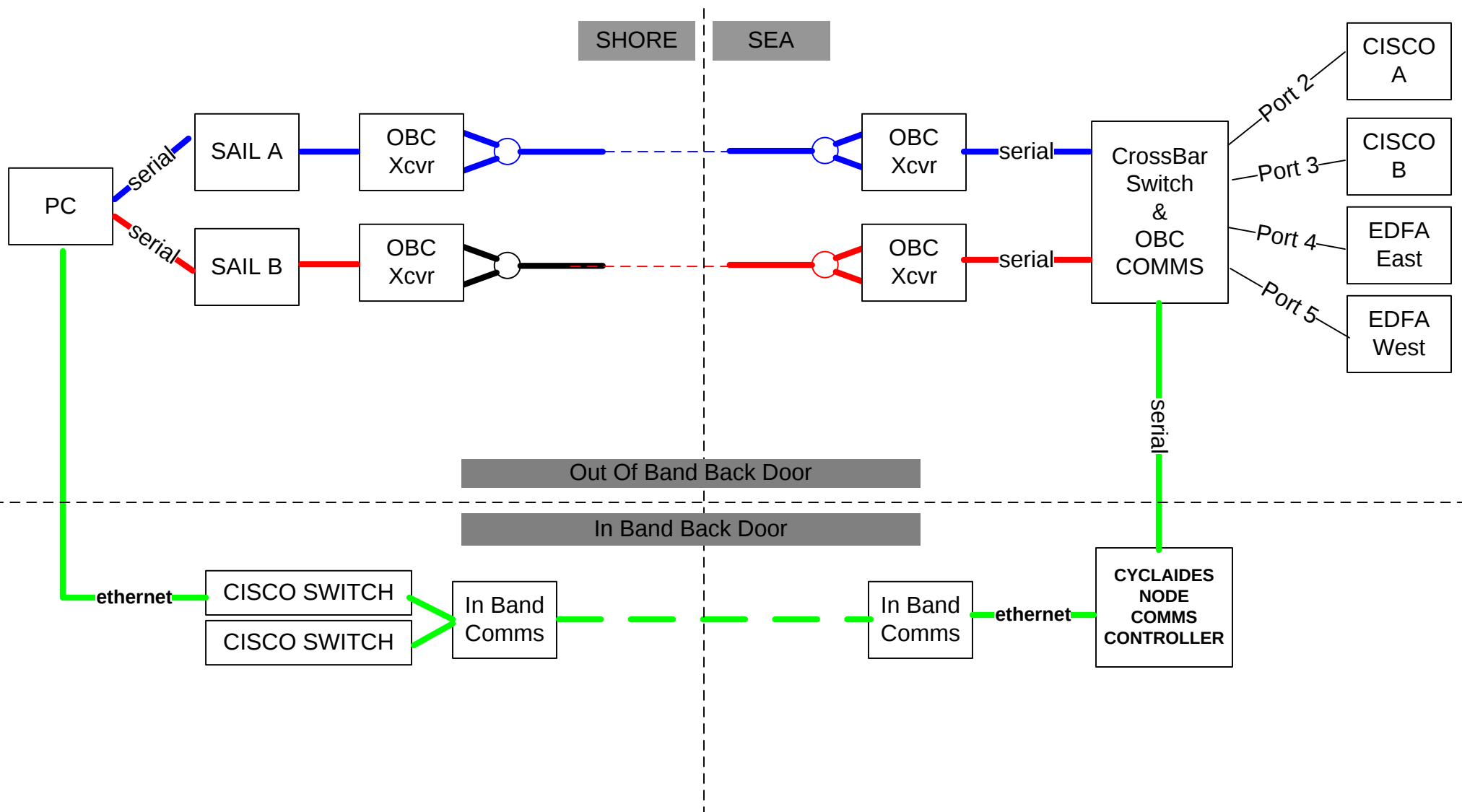
Log into the Power Controller
Power OFF EDFA East
Access Crossbar Mux Port 4 EDFA East
You should not be able to access the EDFA via AD FFFF 1234
Log back into the Power controller
Power ON EDFA East
Access Crossbar Mux Port 4 EDFA East
You should be able to access the EDFA via AD FFFF 1234

Log into the Power Controller
Power OFF EDFA West
Access Crossbar Mux Port 5 EDFA West
You should not be able to access the EDFA via AD FFFF 1234
Log back into the Power controller
Power ON EDFA West
Access Crossbar Mux Port 6 EDFA East
You should be able to access the EDFA via AD FFFF 1234

Log into the Power Controller
Power OFF NE Frame East
Observe the lights on the Shore East NE Frame-
The Loss of Signal (LOS) light should be ON (you may use GYDA to see this)
Power ON NE East
Observe the lights on the Shore East NE Frame-
The Loss of Signal (LOS) light should be OFF (you may use GYDA to see this)

Log into the Power Controller
Power OFF NE Frame West
Observe the lights on the Shore West NE Frame-
The Loss of Signal (LOS) light should be ON (you may use GYDA to see this)
Power ON NE West
Observe the lights on the Shore West NE Frame-
The Loss of Signal (LOS) light should be OFF (you may use GYDA to see this)

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SCHEMATIC FOR PROCEDURE 2: OBC DATA CHANNEL TEST
(each path in color)

V09 - OBC Remote Node Validation (Results)

OBC POWER TEST- Receiver sensitivity test

	Power After Attenuator	Output Power of Shore Transmit Port
East A		
East B		
West A		
West B		

OBC POWER TEST- Transmitter Power Test

	Power measure at splitter mon port
East A	
East B	
West A	
West B	