

O-03 Submarine Cable & Data Reach Test - Results Sheet- Optical Test

OPTICAL TEST-Channel A				
fiber color		blue		
Xpondr	Duration	MRTR Rcv Attenuation	# Errors	power into mrtr
1558.98	1h20m	10dB	0	-14.9
1555.75				
1549.32				
Attenuator on Line EDFA input			10dB	
Input into EDFA from Mux			-11.4	
Input into Cable from EDFA			+6.7	
Output returned from Cable			-14.8	

OPTICAL TEST-Channel A				
fiber color		blue		
Xpondr	Duration	MRTR Rcv Attenuation	# Errors	power into mrtr
1558.98	15h34m	10dB	0	-14.9
1555.75	15h36m	10dB	0	-6.55
1549.32	1h19m	10dB	0	-13.4
Attenuator on Line EDFA input			10dB	
Input into EDFA from Mux			-8.2	
Input into Cable from EDFA			+7.44	
Output returned from Cable			-10.6	

OPTICAL TEST-Channel B				
fiber color		red		
Xpondr	Duration	MRTR Rcv Attenuation	# Errors	power into mrtr
1558.98	1h20m	10	0	-13.5
1555.75				
1549.32				
Attenuator on preamp EDFA output			10dB	
Input into EDFA from Cable			-17.8	
Input into Cable from Mux			-2.7	
Output from preamp EDFA+atten			-20.9	

OPTICAL TEST-Channel B				
fiber color		red		
Xpondr	Duration	MRTR Rcv Attenuation	# Errors	power into mrtr
1558.98	15h34m	10dB	0	-13.5
1555.75	15h36m	10dB	45	-14.07
1549.32	1h19m	10dB	0	-15.4
Attenuator on preamp EDFA output			10dB	
Input into EDFA from Cable			-14.2	
Input into Cable from Mux			+1.0	
Output from preamp EDFA+atten			+8.6	

COMMENTS:

First 2 tests run to verify setup only using one channel.

O-03 Submarine Cable & Data Reach Test - Results Sheet- Electrical Test Using Converters

S E A	ELECTRICAL TEST NUMBER: 1				
	Xpondr	Duration	MRTR Rcv Attenuation	# Errors	power into mrtr
	1558.98	4h32m	10	0	-15.2
	1555.75	4h29m	10	0	-16.3
	1549.32	4h29m	10	0	-13.28
S H O R E	Xpondr	Duration	MRTR Rcv Attenuation	# Errors	power into mrtr
	1558.98	4h32m	10	0	-15.8
	1555.75	4h29m	10	0	-16.8
	1549.32	4h29m	10	0	-15.9
p r e	fiber color			blue	
	Attenuator on preamp EDFA output			10dB	
	Input into EDFA from Cable			-14.2	
	Input into Cable from Mux			+1.0	
	Output from preamp EDFA+atten			+8.6	
l i n e	fiber color			red	
	Attenuator on Line EDFA input			10dB	
	Input into EDFA from Mux			-8.2	
	Input into Cable from EDFA			+7.44	
	Output returned from Cable			-10.6	

S E A	ELECTRICAL TEST NUMBER: 2				
	Xpondr	Duration	MRTR Rcv Attenuation	# Errors	power into mrtr
	1558.98	13h36m	10	1	-15.2
	1555.75	13h47m	10	0	-16.3
	1549.32	13h47m	10	0	-13.28
S H O R E	Xpondr	Duration	MRTR Rcv Attenuation	# Errors	power into mrtr
	1558.98	13h36m	10	0	-15.8
	1555.75	13h47m	10	0	-16.8
	1549.32	13h47m	10	0	-15.9
p r e	fiber color			yellow	
	Attenuator on preamp EDFA output			0	
	Input into EDFA from Cable			-12.4	
	Input into Cable from Mux			+3.1	
	Output from preamp EDFA			-2.9	
l i n e	fiber color			green	
	Attenuator on Line EDFA input			10dB	
	Input into EDFA from Mux			-8.3	
	Input into Cable from EDFA			+13.7	
	Output returned from Cable			-1.6	

COMMENTS:

Test 2 used software to cut output of preamp:

"SA 1 O -2"

resulting in listed output of -2.3 and measured output of -2.9. Attenuator was removed

All tests were done with Ancot BER tester on channels 1555.75 and 1549.32 and CISCO Stardust on 1558.98

O-03 Submarine Cable & Data Reach Test - Results Sheet- Electrical Test Using Converters

S E A	ELECTRICAL TEST NUMBER:			3	
	Xpondr	Duration	MRTR Rcv Attenuation	# Errors	power into mrtr
	1558.98	30m	10	1	-15.2
	1555.75	30m	10	0	-16.3
	1549.32	30m	10	0	-13.28
S H O R E	Xpondr	Duration	MRTR Rcv Attenuation	# Errors	power into mrtr
	1558.98	30m	10	0	-15.8
	1555.75	30m	10	0	-16.8
	1549.32	30m	10	0	-15.9
p r e	fiber color			pink	
	Attenuator on preamp EDFA output			0	
	Input into EDFA from Cable			-12.24	
	Input into Cable from Mux			+3.0	
	Output from preamp EDFA+atten			-3.0	
l i n e	fiber color			brown	
	Attenuator on Line EDFA input			10	
	Input into EDFA from Mux			-8.3	
	Input into Cable from EDFA			+13.6	
	Output returned from Cable			-1.95	

S E A	ELECTRICAL TEST NUMBER:			4	
	Xpondr	Duration	MRTR Rcv Attenuation	# Errors	power into mrtr
	1558.98	30m	10	0	-15.2
	1555.75	30m	10	0	-16.3
	1549.32	30m	10	0	-13.28
S H O R E	Xpondr	Duration	MRTR Rcv Attenuation	# Errors	power into mrtr
	1558.98	30m	10	0	-15.8
	1555.75	30m	10	0	-16.8
	1549.32	30m	10	0	-15.9
p r e	fiber color			orange	
	Attenuator on preamp EDFA output			0	
	Input into EDFA from Cable			-11.8	
	Input into Cable from Mux			+3.0	
	Output from preamp EDFA			-2.94	
l i n e	fiber color			black	
	Attenuator on Line EDFA input			10	
	Input into EDFA from Mux			-8.3	
	Input into Cable from EDFA			+13.5	
	Output returned from Cable			-1.2	

COMMENTS:

Tests used software to cut output of preamp:

"SA 1 O -2"

resulting in listed output of -2.3 and measured output of -2.9. Attenuator was removed

All tests were done with Ancot BER tester on channels 1555.75 and 1549.32 and CISCO Stardust on 1558.98.

These 2 tests were done to check the 3rd and 4th pairs in the cable

O-03 Submarine Cable & Data Reach Test - Reach Tests

FOURTH TEST - OPTICAL REACH - loss -line EDFA		
1 length	Input Signal	
	Measured Output	
2 lengths	Input Signal	
	Measured Output	
3 lengths	Input Signal	
	Measured Output	
4 lengths	Input Signal	
	Measured Output	

FOURTH TEST - OPTICAL REACH - loss-pre-amp EDFA		
1 length	Input Signal	
	Measured Output	
2 lengths	Input Signal	
	Measured Output	
3 lengths	Input Signal	
	Measured Output	
4 lengths	Input Signal	
	Measured Output	

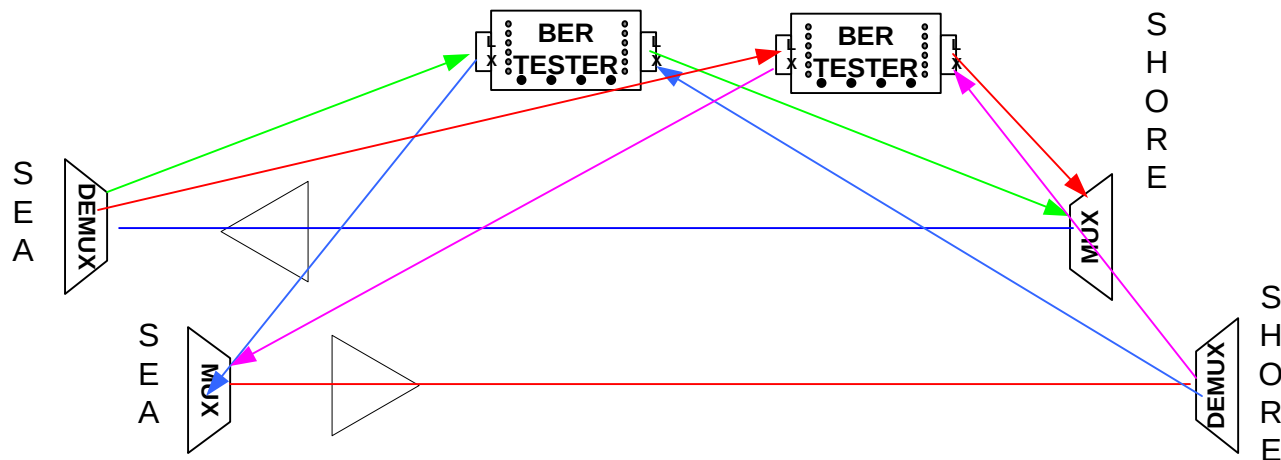
COMMENTS:

See OTDR listing from ALCATEL for optical loss measurements of fibers connected in series

O-03 Submarine Cable & Data Reach Test - Reach Tests

S E A	Reach Test Number:		1			
	Xpondr	Duration	MRTR Rcv Attenuation	# Errors	power into mrtr	from dmx
	1558.98	2h 39m	10	1	-15.2	
	1555.75		10	0	-16.3	
S H O R E	Xpondr	Duration	MRTR Rcv Attenuation	# Errors	power into mrtr	power into mrtr
	1558.98	2h39m	10	0	-15.8	
	1555.75		10	0	-16.8	
	1549.32		10	0	-15.9	
p r e	fiber color			orange + red		
	Attenuator on preamp EDFA output			0		
	Input into EDFA from Cable			-27.0		
	Input into Cable from Mux			3.29		
	Output from preamp EDFA+atten			-2.97		
l i n e	fiber color			black + blue		
	Attenuator on Line EDFA input			10		
	Input into EDFA from Mux			-9.2		
	Input into Cable from EDFA			13.7		
	Output returned from Cable			-16.8		

S E A	Reach Test Number:		1a			
	Xpondr	Duration	MRTR Rcv Attenuation	# Errors	power into mrtr	from dmx
	1558.98	18m	10	1	-15.2	-12.5
	1555.75	18m	10	0	-16.3	-12.2
S H O R E	Xpondr	Duration	MRTR Rcv Attenuation	# Errors	power into mrtr	power into mrtr
	1558.98	18m	10	0	-15.8	-23.26
	1555.75	18m	10	0	-16.8	-24.7
	1549.32	18m	10	0	-15.9	-24.3
p r e	fiber color			orange + red		
	Attenuator on preamp EDFA output			0		
	Input into EDFA from Cable			-27.0		
	Input into Cable from Mux			3.29		
	Output from preamp EDFA+atten			-2.97		
l i n e	fiber color			black + blue		
	Attenuator on Line EDFA input			10		
	Input into EDFA from Mux			-9.2		
	Input into Cable from EDFA			13.7		
	Output returned from Cable			-16.8		



O-03 Submarine Cable & Data Reach Test - Reach Tests

S E A	Reach Test Number:			2		
	Xpondr	Duration	MRTR Rcv Attenuation	# Errors	power into mrtr	from dmx
	1558.98		10		-15.2	
	1555.75		10		-16.3	
S H O R E	1549.32		10		-13.28	
	Xpondr	Duration	MRTR Rcv Attenuation	# Errors	power into mrtr	power into mrtr
	1558.98		10		-15.8	
	1555.75		10		-16.8	
p r e	1549.32		10		-15.9	
	fiber color			orange + red + yellow		
	Attenuator on preamp EDFA output			0		
	Input into EDFA from Cable			-41.8		
	Input into Cable from Mux			3.18		
l i n e	Output from preamp EDFA+atten			-3.06		
	fiber color			black + blue + green		
	Attenuator on Line EDFA input			10		
	Input into EDFA from Mux			-8.98		
	Input into Cable from EDFA			13.6		
	Output returned from Cable			-32.4		

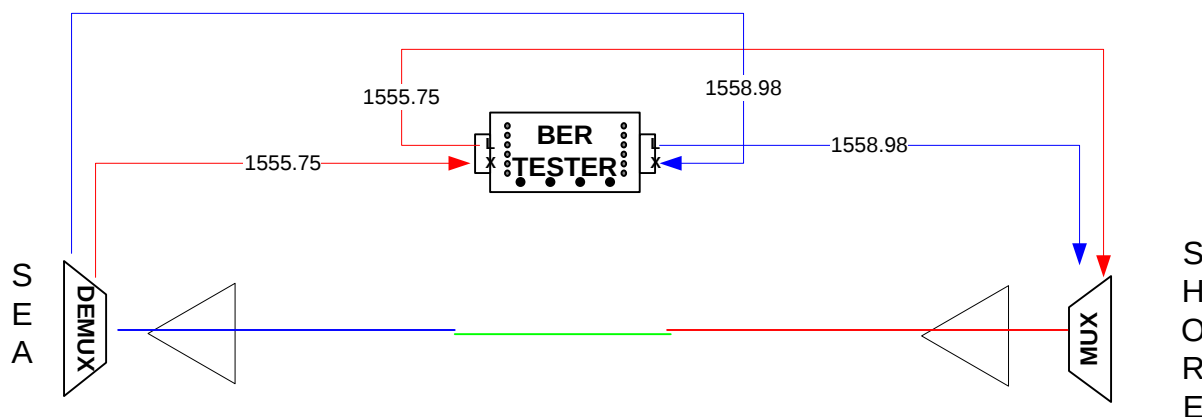
COMMENTS:

All Channels Failed - neither EDFA could reach the 200+ km distance of this (single EDFA) setup

O-03 Submarine Cable & Data Reach Test - Reach Tests with DUAL EDFA

S E A	Dual EDFA Test Number: 1				
	Xpondr	Duration	MRTR Rcv Attenuation	# Errors	from dmx
	1558.98	15m	n/a	0	-8.8
	1555.75	15m	n/a	0	-8.4
p r e	fiber color		orange + red		
	Attenuator on preamp EDFA output			0	
	Input into EDFA from Cable			-17.83	
	Output from preamp EDFA+atten			-2.9	
I n e	Attenuator on Line EDFA input			10	
	Input into EDFA from Mux			-11.27	
	Input into Cable from EDFA			+13.6	

S E A	Dual EDFA Test Number: 2				
	Xpondr	Duration	MRTR Rcv Attenuation	# Errors	from dmx
	1558.98	11h14m	n/a	1	-8.8
	1555.75	11h14m	n/a	0	-8.4
p r e	fiber color		orange + red + black		
	Attenuator on preamp EDFA output			0	
	Input into EDFA from Cable			-32.5	
	Output from preamp EDFA+atten			-2.9	
I n e	Attenuator on Line EDFA input			10	
	Input into EDFA from Mux			-11.27	
	Input into Cable from EDFA			+13.6	



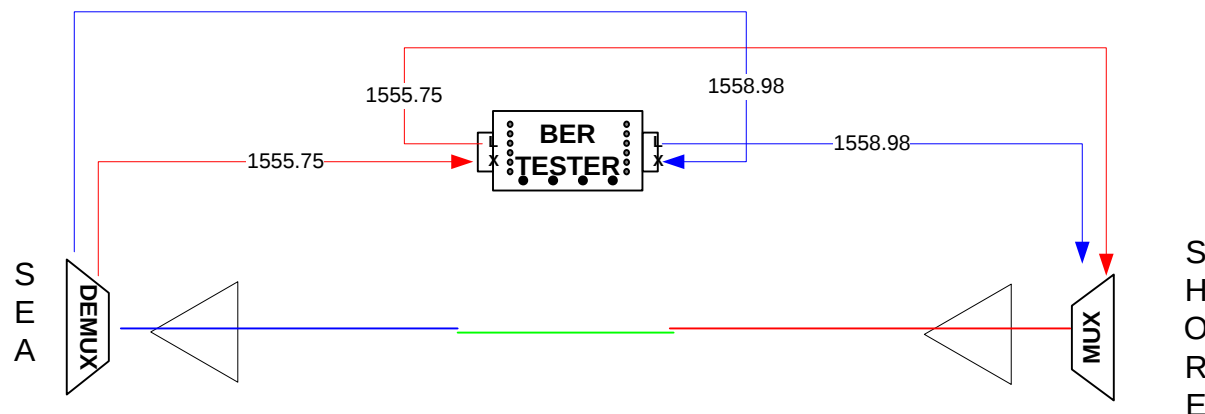
COMMENTS:

Tests were performed with the following SFPs: 2W2040308085 and P4BDJFS03-37
BER tests were ANCOT type CJT for shore wavelength bit patterns.

O-03 Submarine Cable & Data Reach Test - Reach Tests with DUAL EDFA

S E A	Dual EDFA Test Number:		3		
	Xpondr	Duration	MRTR Rcv Attenuation	# Errors	from dmx
	1558.98	15m	n/a	0	-8.8
	1555.75	15m	n/a	0	-8.4
p r e	fiber color		orange + red		
	Attenuator on preamp EDFA output		0		
	Input into EDFA from Cable		-17.83		
	Output from preamp EDFA+atten		-2.9		
l i n e	Attenuator on Line EDFA input		10		
	Input into EDFA from Mux		-11.27		
	Input into Cable from EDFA		+13.6		

S E A	Dual EDFA Test Number:		4		
	Xpondr	Duration	MRTR Rcv Attenuation	# Errors	from dmx
	1558.98	15m	n/a	0	-8.8
	1555.75	15m	n/a	0	-8.4
p r e	fiber color		orange + red + black		
	Attenuator on preamp EDFA output		0		
	Input into EDFA from Cable		-32.5		
	Output from preamp EDFA+atten		-2.9		
l i n e	Attenuator on Line EDFA input		10		
	Input into EDFA from Mux		-11.27		
	Input into Cable from EDFA		+13.6		



COMMENTS:

Repeat of prior test with different BIT patterns as follows:

Test 3 - ANCOT CD pattern for long wavelength BIT pattern

Test 4 - ANCOT CS pattern for mid wavelength BIT pattern simulating power supply noise