Specifications of C-band 40Ch 100GHz Athermal AWG Module

Athermal modules are packaged using athermalization techniques with no electrical power and no temperature control units, can perform MUX/DeMUX functions.



1. Product Information

- Description : C-band 40Ch 100GHz Athermal AWG
- Specification Revision : Version 1.06
- Issue Date : December 20th, 2013
- Product Application :

  The specification serve for C-Band AWG Flat-Top Mux/DeMux in DWDM System.

2. Optical Specifications

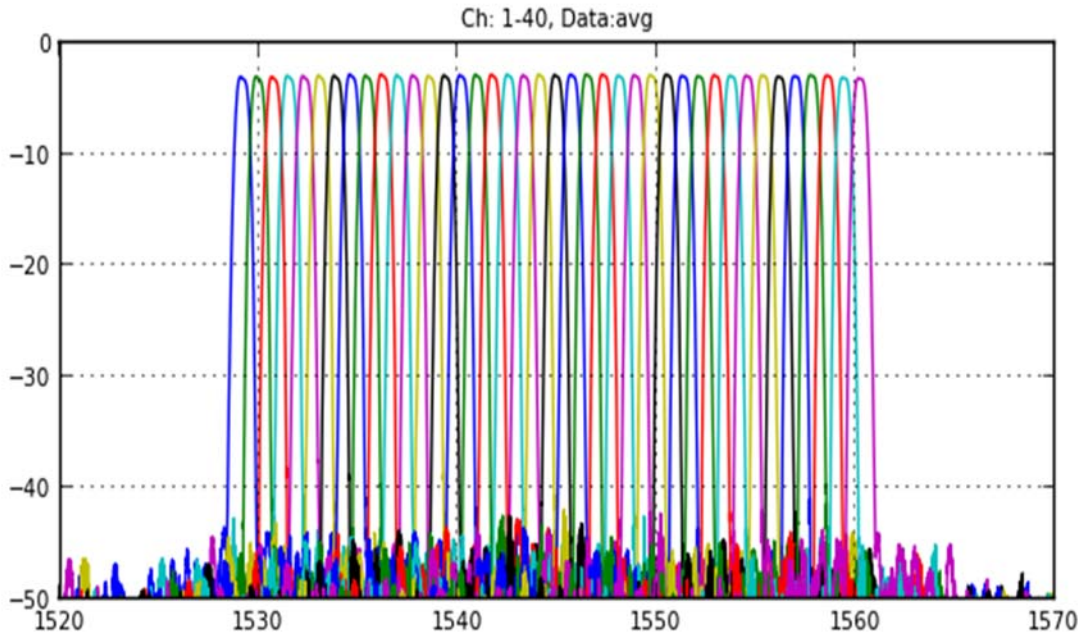
All specifications guaranteed over the operating temperature range.

Parameter	Specifications		Unit	Comment
	Min	Max		
Input Channel	1			
Output Channel	40			16, 32, 48 channels available
Channel Spacing	100		GHz	
Reference Passband	-12.5	12.5	GHz	
Wavelength Accuracy	-50	50	pm	Relative to ITU Grid
1dB Bandwidth	0.2(G)	0.4(F)	nm	**G-Gaussion Type** **F-Flat top Type**
3dB Bandwidth	0.4(G)	0.6(F)	nm	
I.L		6	dB	Worst case in ITU passband
I.L UNI.		1	dB	
Ripple		0.7	dB	Loss variation in ITU passband
PDL		0.5	dB	Max. value in ITU passband
Adjacent Crosstalk	25		dB	Worst case in ITU passband
Non-Adjacent Crosstalk	30		dB	Worst case in ITU passband
Total Crosstalk	22		dB	Cumulative crosstalk of all other channels
Return Loss	40		dB	
Maximum Continuous Optical Power		250	mW	Maximum input optical power
Chromatic Dispersion(CD)	-20	+20	ps/nm	
PMD		0.5	ps	

3. WAVELENGTH PLAN

No	C Even		C Even +		C Odd		C Odd +	
	ƒ(THz)	λ(nm)	ƒ(THz)	λ(nm)	ƒ(THz)	λ(nm)	ƒ(THz)	λ(nm)
1	196.000	1529.553	196.025	1529.358	196.050	1529.163	196.075	1528.968
2	195.900	1530.334	195.925	1530.139	195.950	1529.944	195.975	1529.748
3	195.800	1531.116	195.825	1530.920	195.850	1530.725	195.875	1530.529
4	195.700	1531.898	195.725	1531.702	195.750	1531.507	195.775	1531.311
5	195.600	1532.681	195.625	1532.485	195.650	1532.290	195.675	1532.094
6	195.500	1533.465	195.525	1533.269	195.550	1533.073	195.575	1532.877
7	195.400	1534.250	195.425	1534.054	195.450	1533.858	195.475	1533.661
8	195.300	1535.063	195.325	1534.839	195.350	1534.643	195.375	1534.446
9	195.200	1535.822	195.225	1535.625	195.250	1535.429	195.275	1535.232
10	195.100	1536.609	195.125	1536.412	195.150	1536.216	195.175	1536.019
11	195.000	1537.397	195.025	1537.200	195.050	1537.003	195.075	1536.806
12	194.900	1538.186	194.925	1537.989	194.950	1537.792	194.975	1537.594
13	194.800	1538.976	194.825	1538.778	194.850	1538.581	194.875	1538.383
14	194.700	1539.766	194.725	1539.568	194.750	1539.371	194.775	1539.173
15	194.600	1540.557	194.625	1540.359	194.650	1540.162	194.675	1539.964
16	194.500	1541.349	194.525	1541.151	194.550	1540.953	194.575	1540.755
17	194.400	1542.142	194.425	1541.944	194.450	1541.746	194.475	1541.548
18	194.300	1542.936	194.325	1542.737	194.350	1542.539	194.375	1542.341
19	194.200	1543.730	194.225	1543.532	194.250	1543.333	194.275	1543.135
20	194.100	1544.526	194.125	1544.327	194.150	1544.128	194.175	1543.929
21	194.000	1545.322	194.025	1545.123	194.050	1544.924	194.075	1544.725
22	193.900	1546.119	193.925	1545.920	193.950	1545.720	193.975	1545.521
23	193.800	1546.917	193.825	1546.717	193.850	1546.518	193.875	1546.318
24	193.700	1547.715	193.725	1547.516	193.750	1547.316	193.775	1547.116
25	193.600	1548.515	193.625	1548.315	193.650	1548.115	193.675	1547.915
26	193.500	1549.315	193.525	1549.115	193.550	1548.915	193.575	1548.715
27	193.400	1550.116	193.425	1549.916	193.450	1549.715	193.475	1549.515
28	193.300	1550.918	193.325	1550.717	193.350	1550.517	193.375	1550.317
29	193.200	1551.721	193.225	1551.520	193.250	1551.319	193.275	1551.119
30	193.100	1552.524	193.125	1552.323	193.150	1552.122	193.175	1551.922
31	193.000	1553.329	193.025	1553.128	193.050	1552.926	193.075	1552.725
32	192.900	1557.134	192.925	1553.933	192.950	1553.731	192.975	1553.530
33	192.800	1554.940	192.825	1554.739	192.850	1554.537	192.875	1554.335
34	192.700	1555.747	192.725	1555.545	192.750	1555.343	192.775	1555.142
35	192.600	1556.555	192.625	1556.353	192.650	1556.151	192.675	1555.949
36	192.500	1557.363	192.525	1557.161	192.550	1556.959	192.575	1556.757
37	192.400	1558.173	192.425	1557.970	192.450	1557.768	192.475	1557.566
38	192.300	1558.983	192.325	1558.780	192.350	1558.578	192.375	1558.375
39	192.200	1559.794	192.225	1559.591	192.250	1559.389	192.275	1559.186
40	192.100	1560.606	192.125	1560.403	192.150	1560.200	192.175	1559.997

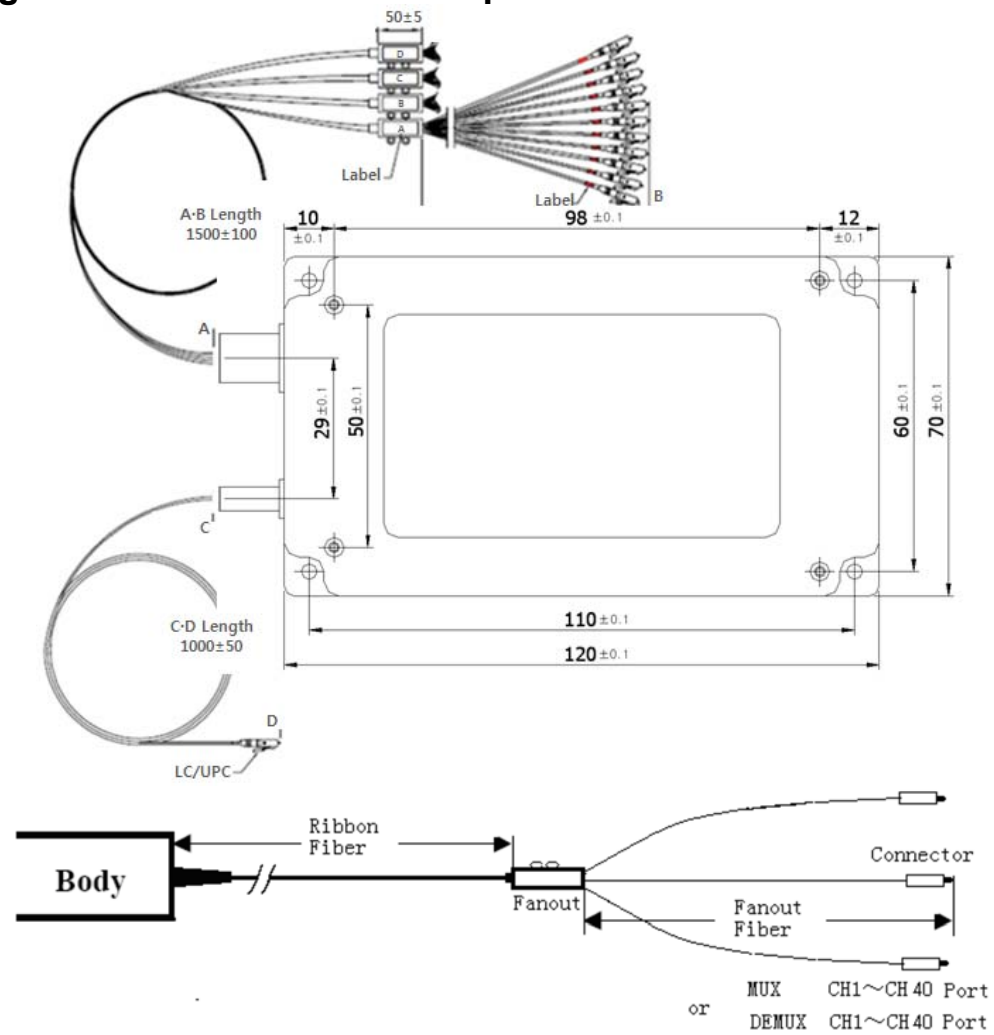
4. TRANSMISSION SPECTRUM



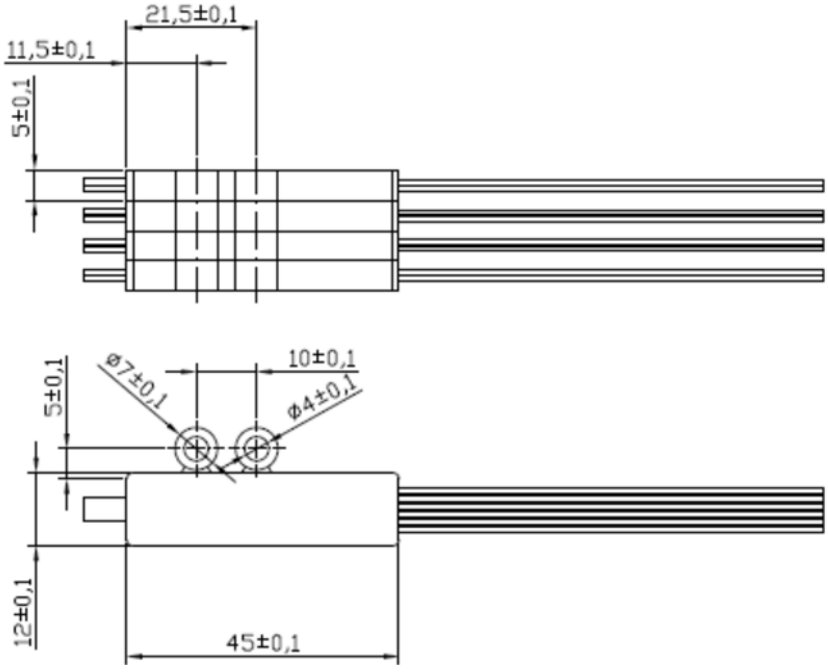
5. TEMPERATURE CONDITIONS

Parameter	Specification	Unit	Note
Operating Temperature Range	-5 ~ +65	°C	
Storage Temperature Range	-40 ~ +85	°C	

6. Configuration: Fiber connectors per customer choice



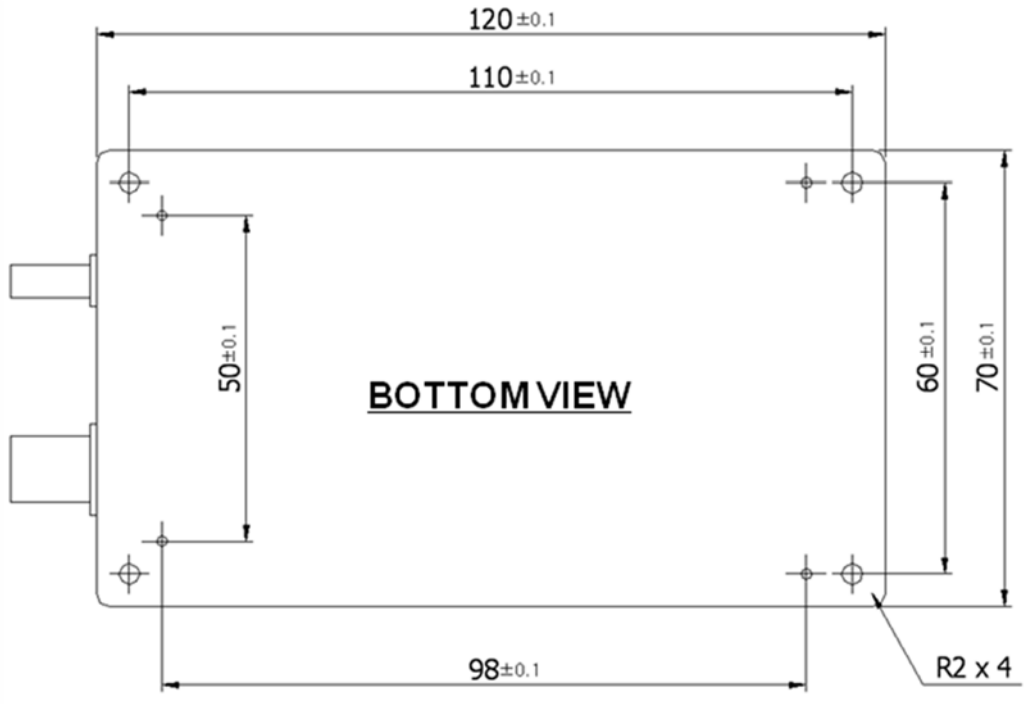
7. Mechanical Drawings: The packaged size is 120mm X 70mm X 10mm for Mux/Demux.





(Side Drawing of 100GHz 40Ch Athermal AWG)

(Bottom Drawing of 100GHz 40Ch Athermal AWG)



(Fan-out Block Drawing of 100G 40Ch Athermal AWG)

8. PIGTAIL AND CONNECTOR

Parameter	Specification	Unit	Note
Pigtail Type	SMF28 with 900um Loose Tube Fiber		
Input Common Fiber	1000±50	mm	
Ribbon Fiber	1000±50	mm	4X12 Ribbon Fiber
Fanout Fiber	500±50	mm	
Connector Type	LC/UPC		

Fiber length and Connector Type is available to change by customer's request.

9. Part Number

AAWG - 1 - F40 - C60 - 10 - 0505 - LA

	Channel Spacing	Passband Profile	Channel Number	Start Channel number	Input Common Fiber Length	Ribbon / Fan output Fiber length	Connecter	
AAWG	1:100GHz	F:Flat-top	32 : 32ch	ITU Channel Table	Ex) 05 : 0.5m 10 : 1m	Ex) 0505 : 0.5m/0.5m 1010 : 1m / 1m	L:LC	A:APC
	2:200GHz	G:Gaussion	40 : 40ch				S:SC	U:UPC
	3：50GHz		48: 48ch				F:FC	

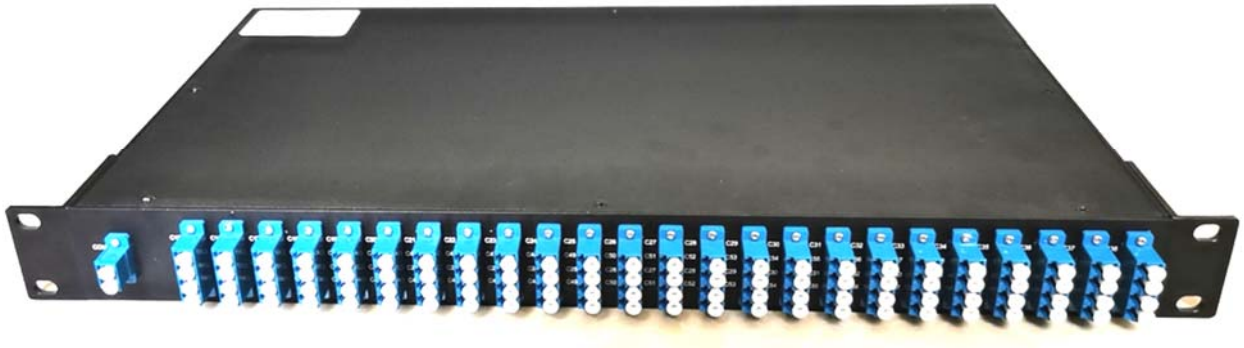
10. LABEL: Modules will be neutral labeled 1). Module Name; and 2) Serial Number and Bar-Code

RU Pannel: 19’1U

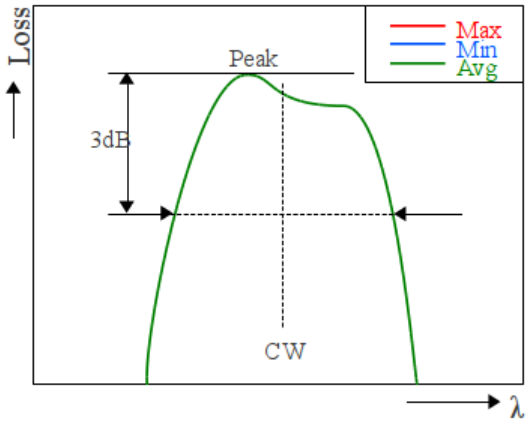
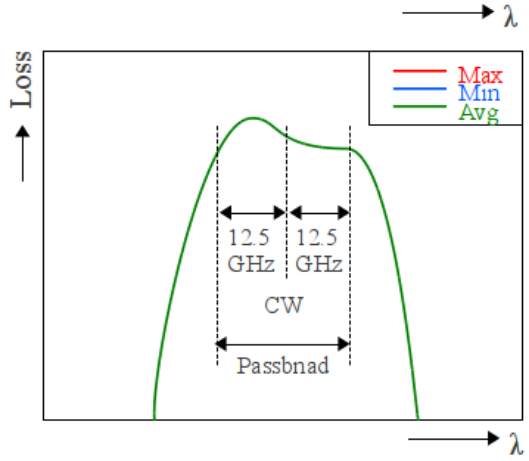
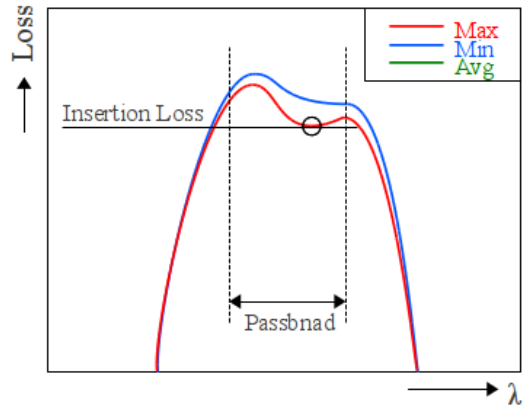
Mux/Demux:16-48CH

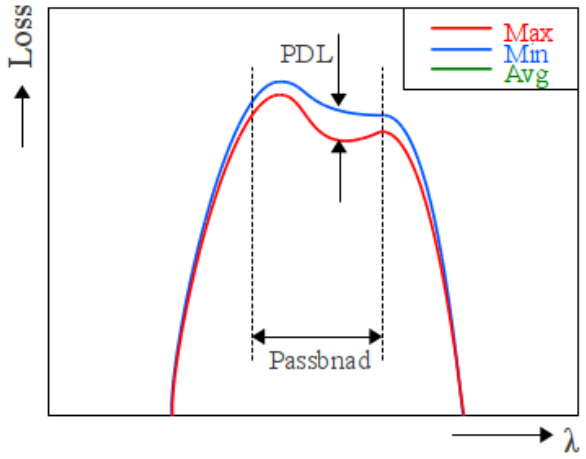
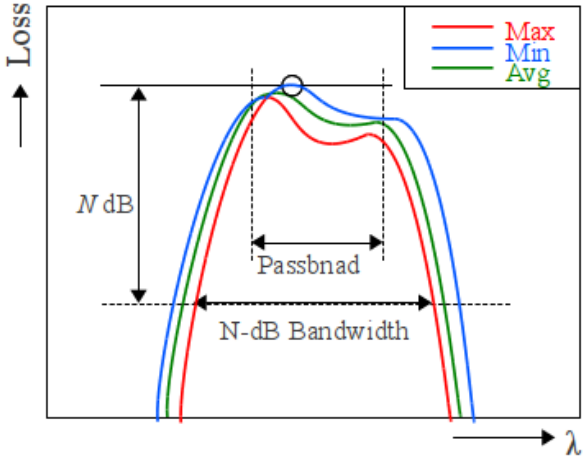
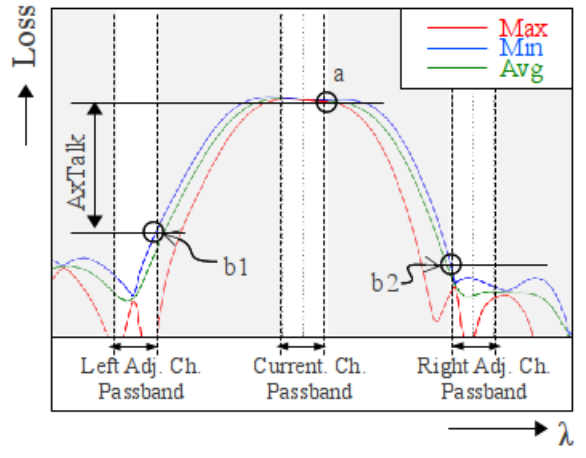


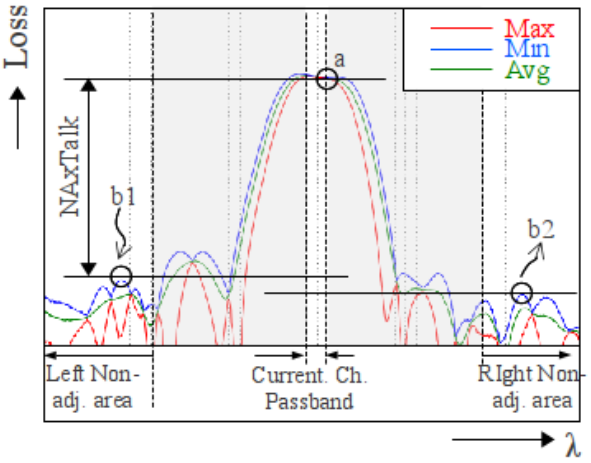
Mux&Demux:32-96CH



11. DEFINITIONS

Description	Image
Center Wavelength (CW): Average of wavelengths where transmission has dropped 3dB form the peak transmission.	
Passband (PB): CW ± 12.5GHz for 40ch 100GHz AWG	
Insertion Loss (IL): The minimum transmission within passband for all polarization states. It represents the worst possible loss within passband.	

Description	Image
Polarization Dependent Loss (PDL): The maximum value that the transmission can vary over all polarization states at a fixed wavelength over the entire passband.	
N-dB Bandwidth: Miminum effective bandwidth reflecting the PDW for worst case of polarization states where transmission has dropped N-dB down from the peak. (N=1, 3, 20)	
Adjacent Crosstalk (AxTalk): The highest transmission within adjacent passbands referenced to the worst case transmission (a) within the selected channel passband. Where, the highest and lowest tramsmissions are determined for any possibly different polarization states within each passband. (i.e., min(a-b1, a-b2))	

Description	Image
Non-adjacent Crosstalk (NAxTalk): The highest transmission within a non-adjacent passband referenced to the worst case transmission within the selected channel passband. Where, the highest and lowest tramsmissions are determined for any possibly different polarization states within each passband. (i.e., a - max(b1, b2))	
Total Crosstalk (TxTalk): The cumulative sum of all tramsmissions of all other channels referenced to the worst case transmission within the selected channel passband.	