



QUINTESSENT

CW-WDM MSA Channel Plan Addition Proposal

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Quintessent



Currently proposed grids in MSA revision 0.52

36 nm span

800 GHz x 9 channels

400 GHz x 17 channels

200 GHz x 33 channels

Lane	8 + 1 wavelength grid set		16 + 1 wavelength grid set		32 + 1 wavelength grid set	
	Center wavelength	Frequency	Center wavelength	Frequency	Center wavelength	Frequency
L ₋₁₆					1282.26 nm ^a	233.8 THz ^a
L ₋₁₅					1283.36 nm	233.6 THz
L ₋₁₄					1284.46 nm	233.4 THz
L ₋₁₃					1285.56 nm	231.9 THz
L ₋₁₂					1286.66 nm	233.2 THz
L ₋₁₁					1287.77 nm	233 THz
L ₋₁₀					1288.88 nm	232.8 THz
L ₋₉					1289.98 nm	232.6 THz
L ₋₈			1282.26 nm ^a	233.8 THz ^a	1291.10 nm	232.4 THz
L ₋₇			1284.46 nm	233.4 THz	1292.21 nm	232.2 THz
L ₋₆			1286.66 nm	233.0 THz	1293.32 nm	232.0 THz
L ₋₅			1288.88 nm	232.6 THz	1294.44 nm	231.8 THz
L ₋₄	1282.26 nm ^a	233.8 THz ^a	1291.10 nm	232.2 THz	1295.56 nm	231.6 THz
L ₋₃	1286.66 nm	233.0 THz	1293.32 nm	231.8 THz	1296.68 nm	231.4 THz
L ₋₂	1291.10 nm	232.2 THz	1295.56 nm	231.4 THz	1297.80 nm	231.2 THz
L ₋₁	1295.56 nm	231.4 THz	1297.80 nm	231.0 THz	1298.93 nm	230.8 THz
L ₀	1300.05 nm	230.6 THz	1300.05 nm	230.6 THz	1300.05 nm	230.6 THz
L ₁	1304.58 nm	229.8 THz	1302.31 nm	230.2 THz	1301.18 nm	230.4 THz
L ₂	1309.14 nm	229.0 THz	1304.58 nm	229.8 THz	1302.31 nm	230.2 THz
L ₃	1313.73 nm	228.2 THz	1306.85 nm	229.4 THz	1303.45 nm	230.0 THz
L ₄	1318.35 nm	227.4 THz	1309.14 nm	229.0 THz	1304.58 nm	229.8 THz
L ₅			1311.43 nm	228.6 THz	1305.72 nm	229.6 THz
L ₆			1313.73 nm	228.2 THz	1306.85 nm	229.4 THz
L ₇			1316.03 nm	227.8 THz	1308.00 nm	229.2 THz
L ₈			1318.35 nm	227.4 THz	1309.14 nm	229.0 THz
L ₉					1310.28 nm	228.8 THz
L ₁₀					1311.43 nm	228.6 THz
L ₁₁					1312.58 nm	228.4 THz
L ₁₂					1313.73 nm	228.2 THz
L ₁₃					1314.88 nm	228 THz
L ₁₄					1316.03 nm	227.8 THz
L ₁₅					1317.19 nm	227.6 THz
L ₁₆					1318.35 nm	227.4 THz

18 nm span

400 GHz x 9 channels

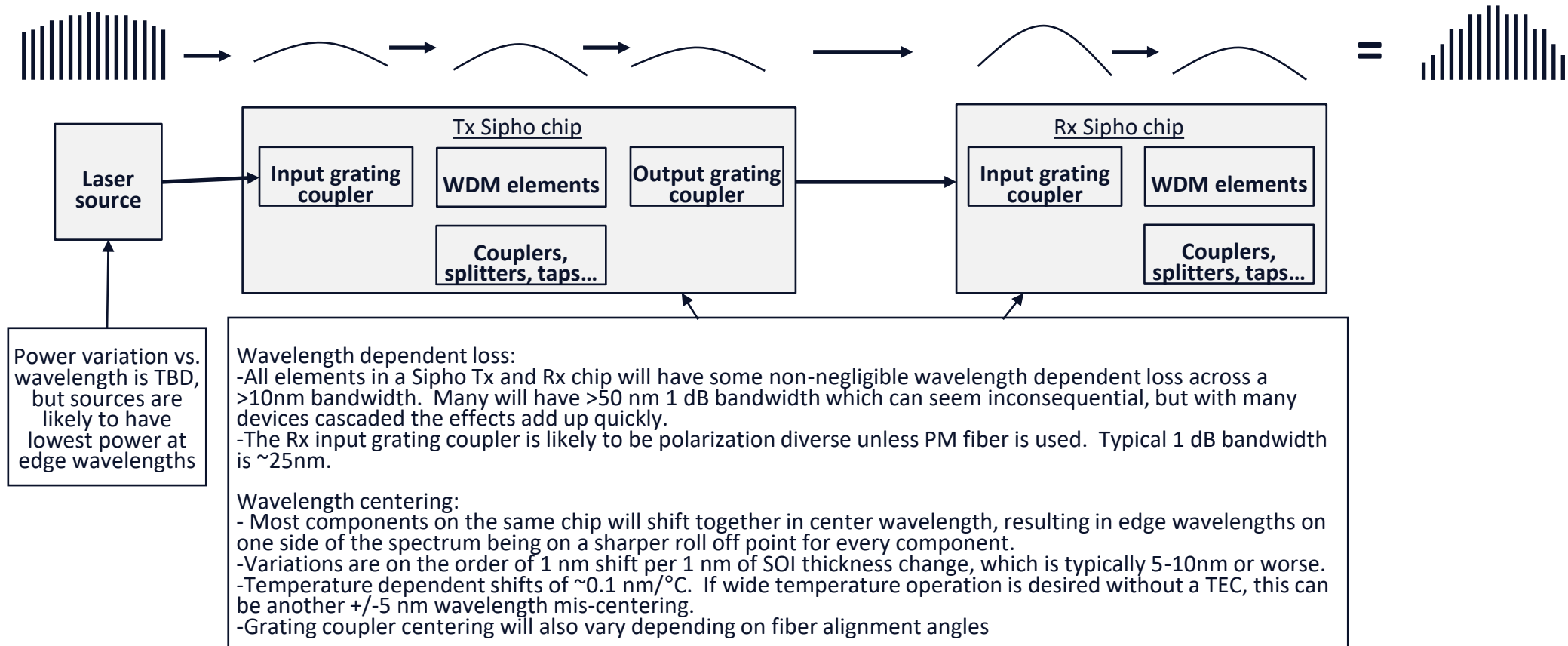
200 GHz x 17 channels

100 GHz x 33 channels

Lane	8 + 1 wavelength grid set		16 + 1 wavelength grid set		32 + 1 wavelength grid set	
	Center wavelength	Frequency	Center wavelength	Frequency	Center wavelength	Frequency
L ₋₁₆					1291.1 nm ^a	232.2 THz ^a
L ₋₁₅					1291.65 nm	232.1 THz
L ₋₁₄					1292.21 nm	232.0 THz
L ₋₁₃					1292.77 nm	231.9 THz
L ₋₁₂					1293.32 nm	231.8 THz
L ₋₁₁					1293.88 nm	231.7 THz
L ₋₁₀					1294.44 nm	231.6 THz
L ₋₉					1295.00 nm	231.5 THz
L ₋₈			1291.1 nm ^a	232.2 THz ^a	1295.56 nm	231.4 THz
L ₋₇			1292.21 nm	232.0 THz	1296.12 nm	231.3 THz
L ₋₆			1293.32 nm	231.8 THz	1296.68 nm	231.2 THz
L ₋₅			1294.44 nm	231.6 THz	1297.24 nm	231.1 THz
L ₋₄	1291.1 nm ^a	232.2 THz ^a	1295.56 nm	231.4 THz	1297.80 nm	231.0 THz
L ₋₃	1293.32 nm	231.8 THz	1296.68 nm	231.2 THz	1298.36 nm	230.9 THz
L ₋₂	1295.56 nm	231.4 THz	1297.80 nm	231.0 THz	1298.93 nm	230.8 THz
L ₋₁	1297.80 nm	231.0 THz	1298.93 nm	230.8 THz	1299.49 nm	230.7 THz
L ₀	1300.05 nm	230.6 THz	1300.05 nm	230.6 THz	1300.05 nm	230.6 THz
L ₁	1302.31 nm	230.2 THz	1301.18 nm	230.4 THz	1300.62 nm	230.5 THz
L ₂	1304.58 nm	229.8 THz	1302.31 nm	230.2 THz	1301.18 nm	230.4 THz
L ₃	1306.85 nm	229.4 THz	1303.45 nm	230.0 THz	1301.75 nm	230.3 THz
L ₄	1309.14 nm	229.0 THz	1304.58 nm	229.8 THz	1302.31 nm	230.2 THz
L ₅			1305.72 nm	229.6 THz	1302.88 nm	230.1 THz
L ₆			1306.85 nm	229.4 THz	1303.45 nm	230.0 THz
L ₇			1308.00 nm	229.2 THz	1304.01 nm	229.9 THz
L ₈			1309.14 nm	229.0 THz	1304.58 nm	229.8 THz
L ₉					1305.15 nm	229.7 THz
L ₁₀					1305.72 nm	229.6 THz
L ₁₁					1306.29 nm	229.5 THz
L ₁₂					1306.85 nm	229.4 THz
L ₁₃					1307.42 nm	229.3 THz
L ₁₄					1308.00 nm	229.2 THz
L ₁₅					1308.57 nm	229.1 THz
L ₁₆					1309.14 nm	229.0 THz



Problem: All grids currently have 18nm+ spans



The cascaded effects will result in lower power at the edges of the channel spans, making link budgets more challenging for some users.

We could expect 1 dB to 3 dB or more wavelength dependent loss from accumulated effects. Narrower spans would minimize the impact.



Proposal: add a 100 GHz, 16+1 channel grid

We suggest also including a 200 GHz spacing, 8+1 channel grid

36 nm span

Lane	8 + 1 wavelength grid set		16 + 1 wavelength grid set		32 + 1 wavelength grid set	
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L ₋₁₆					1282.26 nm ^a	233.8 THz ^a
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L ₋₁₄					1284.46 nm	233.4 THz
L ₋₁₃					1285.56 nm	231.9 THz
L ₋₁₂					1286.66 nm	233.2 THz
L ₋₁₁					1287.77 nm	233 THz
L ₋₁₀					1288.88 nm	232.8 THz
L ₋₉					1289.98 nm	232.6 THz
L ₋₈			1282.26 nm ^a	233.8 THz ^a	1291.10 nm	232.4 THz
L ₋₇			1284.46 nm	233.4 THz	1292.21 nm	232.2 THz
L ₋₆			1286.66 nm	233.0 THz	1293.32 nm	232.0 THz
L ₋₅			1288.88 nm	232.6 THz	1294.44 nm	231.8 THz
L ₋₄	1282.26 nm ^a	233.8 THz ^a	1291.10 nm	232.2 THz	1295.56 nm	231.6 THz
L ₋₃	1286.66 nm	233.0 THz	1293.32 nm	231.8 THz	1296.68 nm	231.4 THz
L ₋₂	1291.10 nm	232.2 THz	1295.56 nm	231.4 THz	1297.80 nm	231.2 THz
L ₋₁	1295.56 nm	231.4 THz	1297.80 nm	231.0 THz	1298.93 nm	230.8 THz
L ₀	1300.05 nm	230.6 THz	1300.05 nm	230.6 THz	1300.05 nm	230.6 THz
L ₁	1304.58 nm	229.8 THz	1302.31 nm	230.2 THz	1301.18 nm	230.4 THz
L ₂	1309.14 nm	229.0 THz	1304.58 nm	229.8 THz	1302.31 nm	230.2 THz
L ₃	1313.73 nm	228.2 THz	1306.85 nm	229.4 THz	1303.45 nm	230.0 THz
L ₄	1318.35 nm	227.4 THz	1309.14 nm	229.0 THz	1304.58 nm	229.8 THz
L ₅			1311.43 nm	228.6 THz	1305.72 nm	229.6 THz
L ₆			1313.73 nm	228.2 THz	1306.85 nm	229.4 THz
L ₇			1316.03 nm	227.8 THz	1308.00 nm	229.2 THz
L ₈			1318.35 nm	227.4 THz	1309.14 nm	229.0 THz
L ₉					1310.28 nm	228.8 THz
L ₁₀					1311.43 nm	228.6 THz
L ₁₁					1312.58 nm	228.4 THz
L ₁₂					1313.73 nm	228.2 THz
L ₁₃					1314.88 nm	228 THz
L ₁₄					1316.03 nm	227.8 THz
L ₁₅					1317.19 nm	227.6 THz
L ₁₆					1318.35 nm	227.4 THz

18 nm span

Lane	8 + 1 wavelength grid set		16 + 1 wavelength grid set		32 + 1 wavelength grid set	
	Center wavelength	Frequency	Center wavelength	Frequency	Center wavelength	Frequency
L ₋₁₆					1291.1 nm ^a	232.2 THz ^a
L ₋₁₅					1292.21 nm	232.0 THz
L ₋₁₄					1293.32 nm	231.8 THz
L ₋₁₃					1294.44 nm	231.6 THz
L ₋₁₂					1295.56 nm	231.4 THz
L ₋₁₁					1296.68 nm	231.2 THz
L ₋₁₀					1297.80 nm	231.0 THz
L ₋₉					1298.93 nm	230.8 THz
L ₋₈			1291.1 nm ^a	232.2 THz ^a	1295.56 nm	231.4 THz
L ₋₇			1292.21 nm	232.0 THz	1296.12 nm	231.3 THz
L ₋₆			1293.32 nm	231.8 THz	1296.68 nm	231.2 THz
L ₋₅			1294.44 nm	231.6 THz	1297.24 nm	231.1 THz
L ₋₄	1291.1 nm ^a	232.2 THz ^a	1295.56 nm	231.4 THz	1297.80 nm	231.0 THz
L ₋₃	1293.32 nm	231.8 THz	1296.68 nm	231.2 THz	1298.36 nm	230.9 THz
L ₋₂	1295.56 nm	231.4 THz	1297.80 nm	231.0 THz	1298.93 nm	230.8 THz
L ₋₁	1297.80 nm	231.0 THz	1298.93 nm	230.8 THz	1299.49 nm	230.7 THz
L ₀	1300.05 nm	230.6 THz	1300.05 nm	230.6 THz	1300.05 nm	230.6 THz
L ₁	1302.31 nm	230.2 THz	1301.18 nm	230.4 THz	1300.62 nm	230.5 THz
L ₂	1304.58 nm	229.8 THz	1302.31 nm	230.2 THz	1301.18 nm	230.4 THz
L ₃	1306.85 nm	229.4 THz	1303.45 nm	230.0 THz	1301.75 nm	230.3 THz
L ₄	1309.14 nm	229.0 THz	1304.58 nm	229.8 THz	1302.31 nm	230.2 THz
L ₅			1305.72 nm	229.6 THz	1302.88 nm	230.1 THz
L ₆			1306.85 nm	229.4 THz	1303.45 nm	230.0 THz
L ₇			1308.00 nm	229.2 THz	1304.01 nm	229.9 THz
L ₈			1309.14 nm	229.0 THz	1304.58 nm	229.8 THz
L ₉					1305.15 nm	229.7 THz
L ₁₀					1305.72 nm	229.6 THz
L ₁₁					1306.29 nm	229.5 THz
L ₁₂					1306.85 nm	229.4 THz
L ₁₃					1307.42 nm	229.3 THz
L ₁₄					1308.00 nm	229.2 THz
L ₁₅					1308.57 nm	229.1 THz
L ₁₆					1309.14 nm	229.0 THz

9 nm span

Lane	16 + 1 wavelength grid set	
	Center wavelength	Frequency
L ₋₁₆		
L ₋₁₅		
L ₋₁₄		
L ₋₁₃		
L ₋₁₂		
L ₋₁₁		
L ₋₁₀		
L ₋₉		
L ₋₈	1295.56 nm	231.4 THz
L ₋₇	1296.12 nm	231.3 THz
L ₋₆	1296.68 nm	231.2 THz
L ₋₅	1297.24 nm	231.1 THz
L ₋₄	1297.80 nm	231.0 THz
L ₋₃	1298.36 nm	230.9 THz
L ₋₂	1298.93 nm	230.8 THz
L ₋₁	1299.49 nm	230.7 THz
L ₀	1300.05 nm	230.6 THz
L ₁	1300.62 nm	230.5 THz
L ₂	1301.18 nm	230.4 THz
L ₃	1301.75 nm	230.3 THz
L ₄	1302.31 nm	230.2 THz
L ₅	1302.88 nm	230.1 THz
L ₆	1303.45 nm	230.0 THz
L ₇	1304.01 nm	229.9 THz
L ₈	1304.58 nm	229.8 THz
L ₉		
L ₁₀		
L ₁₁		
L ₁₂		
L ₁₃		
L ₁₄		
L ₁₅		
L ₁₆		

