

Security Level:

Some more optical vendors input on 25G transmitters

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Questionnaire and responses

- For the following optics by 2020 **with best effort**, What the **minimal launch power** can be guaranteed in volume with a reasonable cost? (The reference point of launch power is the output port of BOSA, in full 0~70°C temperature range)
- What' s their relative cost compared with 10/10G EPON ONU TOSA?

Table 1		
Commercial class 0~70 °C		
	Launch power (dBm)	ER (dB)
25G EML		
25G EML+SOA (XFP package)		
cooled 25G DML		
Uncooled 25G DML		

Table 2	
	Relative Cost with 10/10G EPON ONT TOSA (uncooled DML, P=+4dBm)
25G EML	
cooled 25G DML	
Uncooled 25G DML	

25G transmitter launch power and ER responses

	25G EML		25G cooled DML		25G uncooled DML		25G EML+SOA	
	Power (dBm)	ER (dB)	Power (dBm)	ER (dB)	Power (dBm)	ER (dB)	Power (dBm)	ER (dB)
vendor 1	3~4	8	7	4.5	5~6	4.5	7 (note 1)	8
vendor 2	3	8	5	5	4	4	7	8
vendor 3	4	6	4	4	xx	xx	6~7	6
vendor 4	2.5	8	5.8	4	xx	xx	xx	xx
vendor 5	4.3	8	5.5	4.5	4	4	7	7
vendor 6	4.5	8	6	5	4	4	x	x

Note 1: Proposed to add one more option 10~11dBm with the relative cost ~20 (Assuming develop a new device specially optimized in future)

Relative cost with 10G uncooled DML

Relative cost with 10/10G EPON ONT TOSA				
	25G EML	25G cooled DML	25G uncooled DML	25G EML+SOA
vendor 1	5~7	5~7	2~5	12~15
vendor 2	9.5	6.3	5.8	xx
vendor 3	7	4	xx	xx
vendor 4	xx	xx	xx	xx
vendor 5	4.7	xx	xx	xx
vendor 6	x	x	x	x

Cost is generally difficult to estimate and several vendors didn't feedback the cost estimation.

Summary :

Based on the vendors 'feedback in this contribution:

- The launch power capability of 25G EML is round about 3~4dBm, ER is ~8dB by 2020
- The launch power capability of 25G EML+SOA is round about 7dBm, ER is 6~8dB
- The ER of cooled 25G DML is round about 4~5dB, and the launch power is not that converged .
- The uncooled 25G DML has more technical challenges compared with cooled DML, the launch power is round about 4~6dBm based on the vendors who have responded.
- The cost estimation is quite diverged on this stage based on the current feedback.

Thank you
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