

10GEPON Ad Hoc Group on Wavelength Plan and Power Budgets

Operator's Survey

Introduction

1 Existing Passive Optical Network Deployments

1.1 What versions of PON are currently or soon-to-be in use in your network? (You may select multiple answers.)

- a. 1G EPON
- b. GPON
- c. BPON
- d. other _____
- e. none

1.2 What is the size of your customer base currently served by fiber?

1.3 In your current PON network, what is the maximum distance (design limit) between an OLT and an ONU?

- a. <10 km
- b. 10 km
- c. 10-20 km
- d. other _____ km

1.4 What is the typical split-ratio of your existing PONs?

- a. 1x16
- b. 1x32
- c. 1x64
- d. other 1x_____

1.5 What is the optical loss budget for your existing PONs?

- a. 21.5 dB
- b. 25.5 dB
- c. 28.0 dB
- d. 29.0 dB
- e. _____ dB

1.6 What is the optical design margin (in dB) for your existing PONs?

_____ dB

1.7 Regarding analog video overlay on the PON fiber plant:

- a. Do you use a dedicated wavelength for analog video delivery?

Yes No

If the answer is No, skip questions b – e.

- b. Is the wavelength range of the analog video signal 1550 – 1560 nm?

Yes No

If the answer is no, enter your wavelength here _____ nm

- c. What is the launch power of the analog video signal (in dBm) at the reference point shown in Figure 1.5.c?

_____ dBm

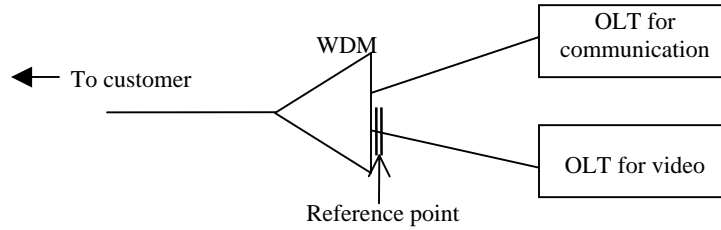


Figure 1.5.c

d. What is the receive-power level (in dBm) of the analog video signal?

_____ dBm

e. What CNR (in dB) do you require at the ONU for the analog video channels?

_____ dB

1.8 Please indicate the percentage of deployed ONUs determined by OLT-to-ONU distance:

- a. < 10km _____% ONUs
- b. 10-20km _____% ONUs
- c. > 20km _____% ONUs (Max distance _____km)
- d. _____ Information not available

2 Future PON Networks

2.1 In your estimation, what percentage of your entire, existing customer base, will be served with fiber by 2010?

- a. <1% _____
- b. <5% _____
- c. <10% _____
- d. <50% _____
- e. >50% _____

2.2 What is the size of your customer base that could potentially be served with fiber?

2.3 Please characterize the extent of your interest in deploying 10G EPON in your network in the future.

- a. ____ Definitely will deploy
- b. ____ Probably will deploy
- c. ____ Neutral – hard to predict
- c. ____ Probably will not deploy
- d. ____ Definitely will not deploy

Additional comments:

2.4 Please select the option that best describes your level of agreement with the following statement:

A 10G EPON solution that provides 1x16 split with reduced cost and complexity (compared to a 1x32 solution) would be:

- a. ____ Of great value in my network,
- b. ____ Of some value in my network,
- c. ____ Of little or no value in my network.

2.5 Please select the option that best describes your level of agreement with the following statement:

A 10G EPON solution that provides 10 km reach with reduced cost and complexity (compared to a 20 km solution) would be:

- a. ____ Of great value in my network,
- b. ____ Of some value in my network,
- c. ____ Of little or no value in my network.

2.6 Regarding longer-reach (more than 20 km) solutions for 10G EPON:

- a. Would you characterize longer-reach (more than 20km) solutions as
 - i) vital,
 - ii) of some value,
 - iii) of slight value,
 - iv) of no value,

for any plans you might have for deployment of 10G EPON?

- b. If long-reach 10G EPON would be valuable to you, would you accept lower PON split-ratios (ie. less than 1 x 32) at extended distances?

Yes No

If the answer is yes, what is the minimum split ratio acceptable to you:

- c. If long-reach 10G EPON would be valuable to you, would you accept more cost and complexity in PON equipment when compared with today's commercial PON products, to get this capability?

Yes No

- d. Please provide any additional comments you may have on long-reach 10G EPON. Please include comments about the percentage increase in cost compared to existing PON solutions that would be acceptable to you.

2.7 Regarding higher split ratio (greater than 1x32) solutions:

- a. Would you characterize higher split ratio (greater than 1x32) solutions as
 - i) vital,
 - ii) of some value,
 - iii) of slight value,
 - iv) of no value,

for any plans you might have for deployment of 10G EPON?

- b. If higher-split ratio 10G EPON would be valuable to you, would you accept lower distances?

Yes No

Please comment on the minimum distance you would accept:

- c. If high-split ratio 10G EPON would be valuable to you, would you accept more cost and complexity in PON equipment, compared with a 1x32 split 10G EPON product, to get this capability?

Yes No

- d. Please provide any additional comments you may have on high split-ratio 10G EPON. Please include comments about the percentage increase in cost compared to existing PON solutions that would be acceptable to you.

2.8 Regarding analog video overlay on the PON fiber plant:

- a. Do you anticipate using a dedicated wavelength for analog video delivery on a future, 10G EPON network?

Yes No

(If the answer is No, skip questions b – e.)

- b. Do you anticipate the wavelength range of the analog video signal would be 1550 - 1560 nm?

Yes No

If the answer is no, enter your wavelength here _____nm

- c. What launch power (in dBm) of the analog video signal at the reference point in the Figure 1.5.c do you anticipate?

_____ dBm

- d. What is the receive power level of the analog video signal in dBm?

_____ dBm

- e. What CNR (in dB) do you require at the ONU for the analog video channels?

_____ dB

3 Coexistence of Disparate PON Technologies

3.1 Regarding the need for PON technology upgrade capabilities:

- a. By 2010, I will have a significant portion of my subscriber network converted to a current PON technology.

___ Yes ___ No ___ Not Sure

(If the answer is No, skip questions b and c.)

- b. Please indicate what existing PON technology would be deployed before 2010 (check all that apply):

___ 1G EPON
___ GPON
___ BPON
___ other _____

- c. Which of the following statements best describes the anticipated needs of your network (ie. in the 2010 timeframe)?

i. A future PON (eg.10G EPON) solution that facilitates coexistence with my preexisting PON systems (ie. on the existing fiber plant) would be vital to my upgrade strategy.

a. Would you accept additional cost and complexity in the future PON equipment (relative to similar technology without coexistence capability) to get this capability?

___ Yes ___ No

If yes, then what percentage increase in cost would you accept _____

b. Would you be willing to deploy a blocking filter at each installed pre-10G ONU to get this capability?

___ Yes ___ No

ii. Future PON technologies (e.g. 10G EPON) would be used primarily in greenfield deployments or circumstances in which all PON subscribers upgrade at the same time. I do not anticipate that the coexistence on a common fiber plant of an existing PON solution and future PON deployments will be vital to my upgrade strategy.

___ Yes ___ No

iii. Other (please describe):
