



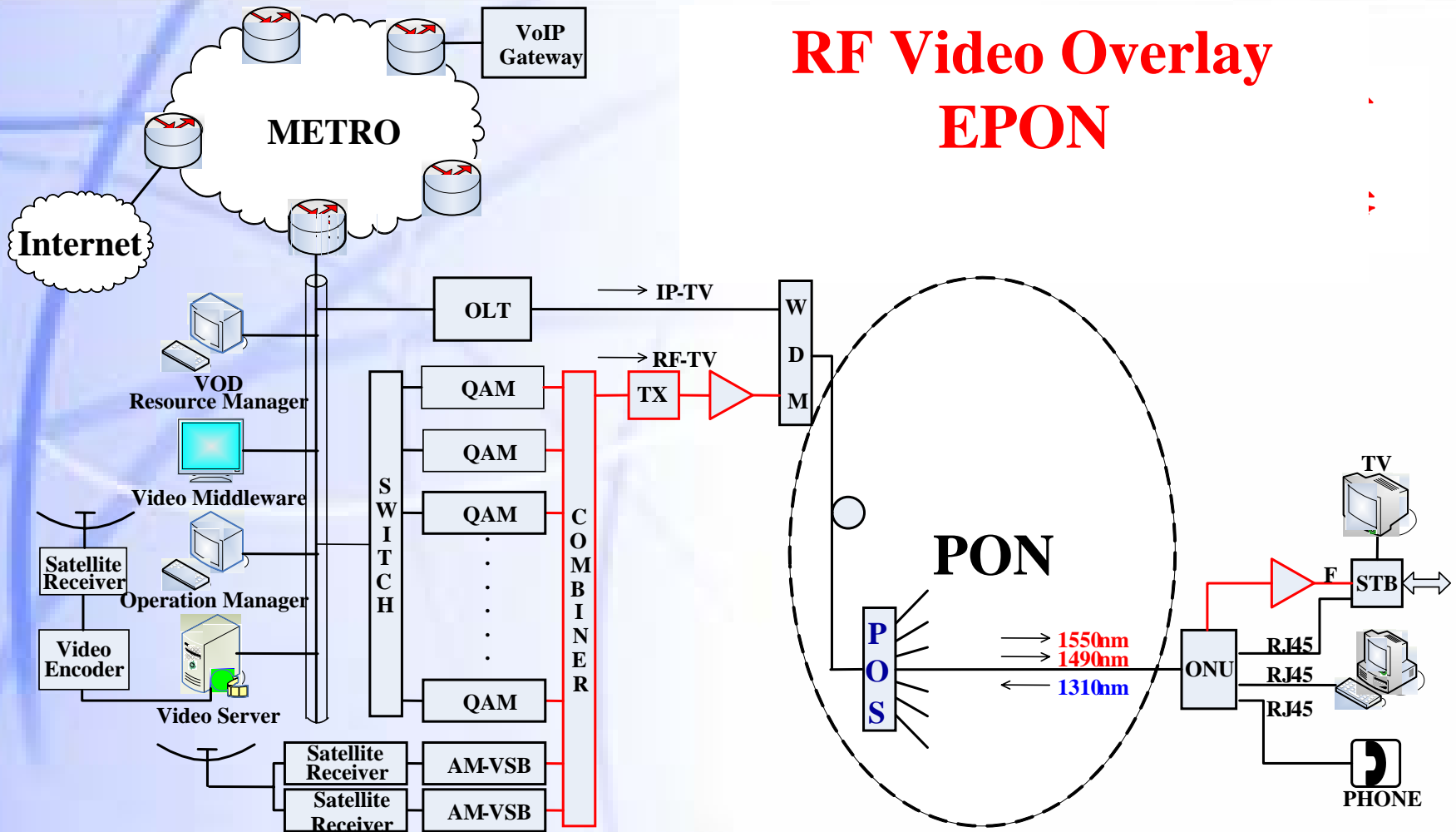
# **Consideration on Coexistence Problem of 10GE PON**

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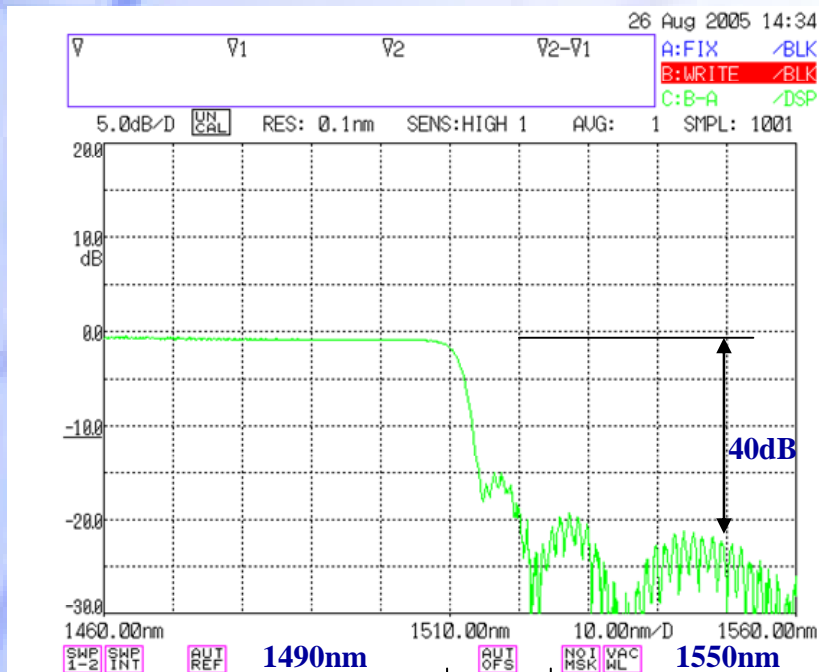
# Coexistence with RF-Video Overlay

- Many cable operators in the world use RF modulated 1550nm lightwave to broadcast analog and digital video programs to subscribers. Although analog video service is being transited to digital one, the video signals are still carried by RF sub-carriers –either AM-VSB modulated RF or QAM modulated RF.
- For example, there were 139 millions CATV subscribers in China by the end of 2006. Among them 10 millions received QAM modulated digital TV programs. In the cable TV stations which completed analog-to-digital transition, 6-8 analog programs are still required to deliver up to 2015.
- IP-TV services are growing up, but RF-TV will keep dominant in the video service market for a long time. So GEAPON and 10GEAPON coexistence with RF-Video Overlay should be considered.
- Similarly GPON coexistence with RF-Video has been considered in U.S. and Europe.

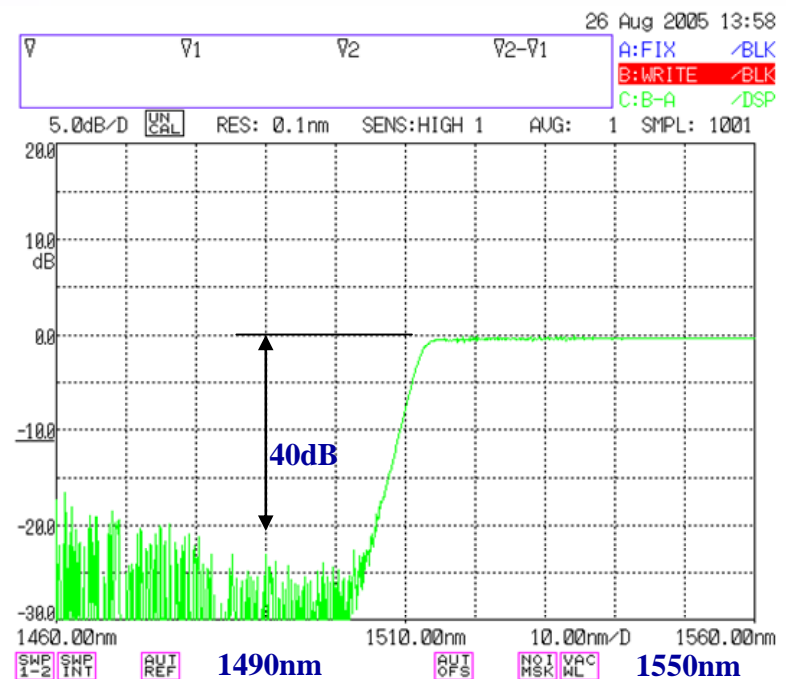
# RF Video Overlay EPON



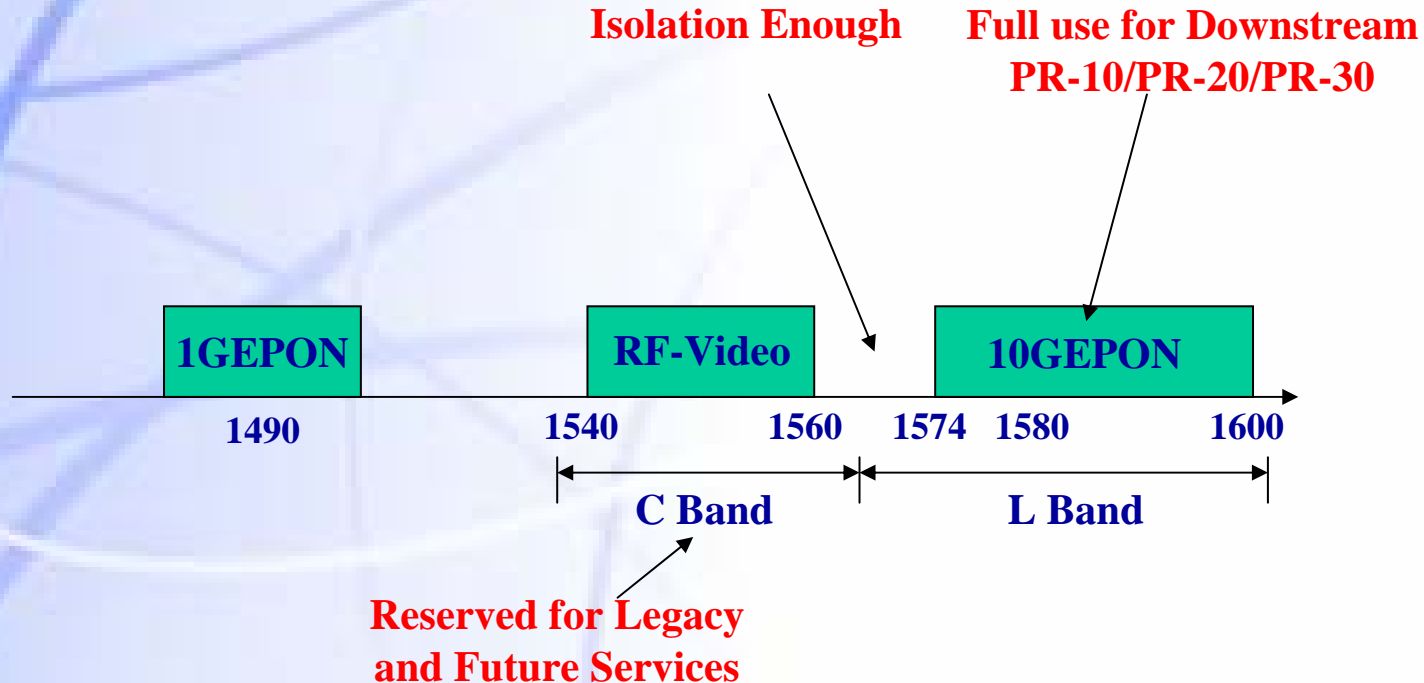
# Linear Crosstalk Avoidance



14nm transition band



# Wavelength Plan of 10GEAPON



- To weaken the Raman interference from data channel to RF Channel, Control the transmitted power of OLT as low as possible.

# Conclusion

- **Why C band is not appropriate for downstream of 10GEPON?**
  - (1) **RF-Video delivery working at wavelength of 1550nm is a world-wide reality. As an international standard IEEE 802.3av should take the reality into account.**
  - (2) **Leave C band for legacy and future services.**
- **Make full L band for 10GEPON downstream to open the window for future upgrading by WDM technology.**



***Thanks***