



## Q&A

# CMTS and Wideband Questions and Answers

### **Q. What are the advantages of the Cisco Systems® Wideband offering?**

- A. a.** There are major advantages with the existing Cisco® uBR10012 Universal Broadband Router and 5 x 20 line card. The Cisco uBR10012 Universal Broadband Router has extremely high density and a rich software feature set and is a proven platform for both voice and data deployments.
- b.** New wideband capabilities add to the Cisco uBR10012 Universal Broadband Router leadership position by enabling very high-speed broadband through channel bonding technology. But wideband is about more than just faster broadband. It also provides the following important benefits:
- a.** Cisco Wideband utilizes field-proven, low-cost edge quadrature amplitude modulation (QAM). This has two advantages. First, it significantly reduces cost; RF ports on an edge QAM are typically one-third to one-fourth the cost of RF ports on a cable modem termination system (CMTS). Second, it enables cable operators to add downstream capacity without being forced to add upstream capacity at the same time.
  - b.** Second, the new Wideband Shared Port Adapter (SPA) and SPA Interface Processor (SIP) use a network interface slot and *do not* take up valuable RF card slots. As a result, the downstream capacity of the Cisco uBR10012 Universal Broadband Router has more than doubled. A fully configured uBR10012 can now have up to 88 downstreams: 40 downstreams provided by 8 5x20U card, and 48 downstreams provided via two Wideband SPA modules.

### **Q. What are the components of the Cisco wideband solution?**

- A. a.** There is a new SPA Interface Processor (SIP) module (UBR10-2XWB-SIP) in the Cisco uBR10012 Universal Broadband Router CMTS; each SIP can take two new Shared Port Adapter (SPA) modules (SPA-24XWB-SFP); each SPA connects over Gigabit Ethernet to an edge QAM device.
- b.** Edge QAMs from multiple vendors are supported, including the eXtra Dense QAM Array (XDQA) edge QAM from Scientific Atlanta. This allows cable operators to deploy field-proven edge QAMs, rather than being forced to qualify a new edge QAM product. Cisco offers full modularity and compatibility with existing edge QAMs from multiple vendors.
- c.** Wideband-capable cable modems can receive the traffic; Scientific Atlanta offers a three-channel wideband cable modem called the DPC2505. For premium customers, Linksys offers an 8-channel modem called the WCM300.

### **Q. How is wideband load sharing accomplished?**

- A.** Cisco wideband uses the “packet bonding” technique that is described in the DOCSIS® 3.0 specification. Packets are transmitted out the various channels in round robin fashion. Sequence numbers are applied, and the wideband cable modem reorders the packets if they arrive out of order.



**Q. How will wideband affect my wiring?**

**A.** Wideband has minimal effect on wiring. Rather than connecting RF ports out of the CMTS to a combiner, edge QAM RF ports will be connected to a combiner instead. Wideband requires additional carrier frequencies (one per channel in the Wideband channel group), but no additional fiber will be required to the node.

**Q. Do my Wideband channel frequencies have to be consecutive?**

**A.** No they do not – as long as the cable modem supports non-sequential channels. Scientific Atlanta's DPC2505 and Linksys' WCM300 both support non-sequential channels in a channel bonding group.



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