Universal Wideband Edge QAM Solution
A New Way to Manage the Edge and Future-Proof Your Network
Rising to the challenge of today’s high-bandwidth applications

It’s an exciting time in our industry, with advanced broadband services, high-speed data, video on demand, IPTV, digital phone service, as well as HD channels and services becoming standard. Today more than ever consumers rely on your network to deliver anywhere — on any device — and at any time. If your network can’t deliver, your customers will complain…or worse, switch to another provider.

The challenges you face are clear, but so are the opportunities. If your network infrastructure can meet the high bandwidth and network capacity demands required to fuel the constant wave of innovation and technology, then you can deliver the viewing experiences that consumers want – even faster and better than your competition.

Solving your most challenging broadband network infrastructure issues requires more than just a vendor.

To achieve this, you don’t need just another network infrastructure vendor. You need advanced solutions that help you roll out new services easily and cost-effectively with maximum flexibility for growth. A partner with the engineering and design expertise to help you future-proof your network with more built-in intelligence, energy savings, scalability and reliability than ever before.

You need the kind of innovation that can only come from CommScope – a highly trusted industry resource with a long history of experience across broadband, enterprise and wireless communication network infrastructure.
Introducing the industry’s first all-digital, carrier-grade Universal Wideband Edge QAM

The Universal Wideband Edge QAM is a high-density QAM modulator – up to 2,560 QAMs per chassis – that gives you a new way to manage the edge: one simple, intelligent device that delivers all your digital services from one RF port per Service Group.

The Universal Wideband Edge QAM combines many typically separate functions into one platform that delivers the flexibility and performance your network needs today, while also preparing your network for future technology advancements and bandwidth needs.

By directly digitizing the entire 1 GHz band, CommScope’s Universal Wideband Edge QAM solution achieves superior RF performance and enhanced remote control flexibility never before available from an edge QAM.

What’s in a Name?

**Universal** – QAM channels can be configured as any service – DOCSIS, broadcast video, Switched Digital Video or Video-On-Demand

**Wideband** – Allowing operators to add individual QAM channels anywhere within the full 54 MHz to 1 GHz band using software tools

**Edge** – Where the equipment resides in the headend or hub, on the edge

**QAM** – Quadrature Amplitude Modulation – method of modulation that allows two channels to be carried at the same frequency making it possible to transmit more bits as the QAM number increases
Powerful flexibility and intelligence: The difference is in the design.

CommScope’s Universal Wideband Edge QAM, the only product to receive Broadband Technology Report’s coveted 5 Diamond rating in 2011, delivers a flexible, programmable, scalable open platform that enables you to:

Roll out services faster, easier and more cost-effectively. With our Edge QAM, you can implement additions and changes in minutes vs. weeks – and you can do it remotely without re-cabling. This saves time and money in labor and installation costs, making it a simple, intelligent way to do business.

Add more QAM channels quickly and easily without changing the combining network or adding unnecessary costs up front. Having the entire 54 MHz to 1 GHz spectrum available on every RF port eliminates the need for expensive and complex RF combining architectures. Additionally, the multiple Gigabit Ethernet and 10G Ethernet interfaces and internal Ethernet switching eliminates the need for costly external Ethernet Switch networks. With the Universal Wideband Edge QAM, you can add individual QAMs as needed anywhere available in the 1GHz band with no additional hardware. So you can add more capacity without service interruptions, reduce customer complaints and increase customer retention.

Eliminate service disruptions with full redundancy. The Universal Wideband Edge QAM is built from the ground up to be fully redundant, so customers are never without service. By designing a complete high-availability capability into the product, multiple system operators can deliver the highest level of services and customer satisfaction. The Universal Wideband Edge QAM has unique RF switching capabilities built in, providing you with the industry’s highest level of reliability.

Lower OpEx and CapEx. Unlike previous generations of Edge QAMs with power usages between 5 and 2.5W/QAM, the CommScope Universal Wideband Edge QAM was designed for extremely low power usage – 0.5W/QAM at capacity. The unique design of the Universal Wideband Edge QAM lowers the total cost of ownership by reducing hub powering and cooling, wiring complexity and installation costs.

The Universal Wideband Edge QAM reduces power by 15% in one US MSO rollout
- 8 units replace 80
- Increases QAMs by 50%, reduces power by 15%
- Hub temperature decreased 6°F
Exploring the technology behind the Wideband Edge QAM:

- Ultra-high density is enabled by the LiquidQAM2 chip technology
- Supports 160 QAMs/ RF Port over the entire 54 MHz to 1GHz band for any broadcast or narrowcast services
- Existing LxS-3616 Edge QAM is upgradeable to the newest LxS-16016 Universal Wide-band Edge QAM and all line cards are interoperable between chassis
- Carrier-class architecture: Full redundancy for all components
- Built-in RF switching capabilities
- Internal multicast switch allows internal video or QAM replication and minimizes switch requirements
- Graceful migration path for increased capacity required for VOD, SDV, DOCSIS, RS-DVR, IPTV from the MPEG Transport world to all IP
- Flexible/programmable IP switch frontend: 20 Gb/s to 100 Gb/s output capacity
- Compliant with CCAP architecture

How current QAM models do not meet the demands of today’s high-bandwidth applications:

- Many lack density to address current bandwidth needs
- High power consumption increases energy costs
- Installation can be difficult and incur additional labor costs
- Limited flexibility to grow and expand quickly and easily, reducing your ability to add capacity to fit your needs
- Difficulty delivering software updates without service interruptions
Case Study

Potential savings: $229,000 with Wideband Edge QAM

Challenge: A large North American cable operator wanted to upgrade the SDV system in one suburban hub with 80 service groups.

Results: Five-year cost savings of $229,000 or about $100/QAM.

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<thead>
<tr>
<th>Area of Savings</th>
<th>Impact</th>
<th>Amount Saved</th>
</tr>
</thead>
<tbody>
<tr>
<td>Power consumption</td>
<td>Reduced energy costs, lower power consumption</td>
<td>$22,463 per year</td>
</tr>
<tr>
<td>HVAC, UPS backup, generator, hub powering</td>
<td>Improved HVAC efficiency, increased generator capacity</td>
<td>$73,000 up front</td>
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<tr>
<td>Ethernet connections</td>
<td>20x fewer connections</td>
<td>$7,300</td>
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<tr>
<td>Coax connections and combiners</td>
<td>5x fewer connections</td>
<td>$6,400</td>
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<tr>
<td>Hub switches and routers</td>
<td>Greater routing capacity per hub</td>
<td>Site specific</td>
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<tr>
<td>Installation cost savings</td>
<td>Fewer truck rolls</td>
<td>$32,000</td>
</tr>
<tr>
<td>Rack space</td>
<td>Varies by hub</td>
<td>Site specific</td>
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Why CommScope for your network

We have a long history of designing and engineering innovative infrastructure solutions that help our customers overcome even the most complex network challenge. Our expertise spans virtually all of the world’s communication networks – broadband, enterprise and wireless – and we channel this unique perspective to deliver solutions that prepare your network for every technology – and opportunity – that the future may bring.

Your success is our story

CommScope is a trusted resource and partner around the world because we’re invested in you: your people, your networks, your success. It inspires us to build relationships and infrastructure…connect people and technologies across protocols, oceans, and time zones…and share what we learn along the way. We’ll never stop connecting and evolving networks for the business of life at home, at work, and on the go.