Background

- MoCA technology is the fastest and most reliable home networking technology standard available.
  - MoCA 2.0: actual data rates of 1 Gbps.
  - MoCA 2.5: actual rates of 2.5 Gbps.
- Makes Wi-Fi® better.
- Lowers total cost of network ownership.
- MoCA technology has been adopted by pay TV and network operators worldwide.
- MoCA Access 2.5 now available.
- 237 certified products
MoCA 2.0

• **One Gbps actual data rate.**
• One packet error (PER) in 100 million with 3.6 ms latency.
• Sleep and standby power modes.
• Operating frequency range from 500-1650 MHz.
• Backward interoperable with MoCA 1.1.
MoCA Home 2.5

- **2.5 Gbps actual data rate.**
- Additional features:
  - MoCA protected setup (MPS):
  - Management proxy
  - Enhanced privacy
  - Network-wide beacon power
  - Bridge detection
- Backward interoperable with MoCA 2.0/1.1.
MoCA Access™ 2.5

- Fiber extension technology using in-building coaxial cabling.
- Based on MoCA 2.5 specification.
- Throughput is 2.5 Gbps downstream and 2 Gbps upstream.
- Latency is less than 5ms.
- Point-to-multipoint serving up to 63 modems (clients).
- Works over existing in-building coaxial wiring.
- Operating frequency range of 400MHz - 1675MHz.
- Co-exists with TV, DOCSIS and cellular (4G/5G) technologies.
- Supports standard traffic shaping and QoS up to eight (8) traffic classes.
- Strong security support.
- Three transmission power modes with 45dB, 55dB or 65dB link budgets and power saving modes.
MoCASec™

- Provides point-to-point link privacy that allows for seamless integration of MoCA technology into home networks supporting the Wi-Fi Alliance’s EasyMesh™.
- MoCASec is available via firmware upgrade for MoCA Home™ 2.0/2.5 and MoCA Access 2.5 devices, and is part of the MoCA Home™ 3.0 standard.
# MoCA Standards

## MoCA Home Networking (Mesh)

<table>
<thead>
<tr>
<th></th>
<th>MoCA 2.0</th>
<th>MoCA 2.0 Bonded</th>
<th>MoCA 2.5</th>
<th>MoCA 3.0</th>
</tr>
</thead>
<tbody>
<tr>
<td>Year Introduced</td>
<td>2010</td>
<td>2016</td>
<td>2016</td>
<td>2018</td>
</tr>
<tr>
<td>Actual MAC Throughput</td>
<td>500 Mbps</td>
<td>1 Gbps</td>
<td>2.5 Gbps</td>
<td>10 Gbps</td>
</tr>
<tr>
<td>One-Way Latency in Milliseconds</td>
<td>3.6</td>
<td>3.6</td>
<td>&lt;5</td>
<td>2.5</td>
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<tr>
<td>Channel Width in MHz</td>
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<td>100</td>
<td>100</td>
<td>400</td>
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<tr>
<td>Number of Channels Bonded</td>
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<td>3~5</td>
<td>Up to 4</td>
<td></td>
</tr>
<tr>
<td>Modulation</td>
<td>1024 QAM</td>
<td>1024 QAM</td>
<td>1024 QAM</td>
<td>8192 QAM</td>
</tr>
<tr>
<td>Field Test</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Power Save (Standby and Sleep)</td>
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<tr>
<td>Network-wide Privacy</td>
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<tr>
<td>MoCASec™ Peer to Peer Security</td>
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</tr>
</tbody>
</table>

*MoCASec™ is available via firmware update for MoCA 2.0/2.5. MoCASec™ is embedded in MoCA 3.0.

## MoCA Access

<table>
<thead>
<tr>
<th></th>
<th>MoCA 2.5</th>
<th>MoCA 3.0 (in development)</th>
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</thead>
<tbody>
<tr>
<td>Year Introduced</td>
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<td>2019</td>
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<tr>
<td>Actual MAC Throughput</td>
<td>2.5 Gbps</td>
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<tr>
<td>One-Way Latency in Milliseconds</td>
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<tr>
<td>Channel Width in MHz</td>
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<td></td>
</tr>
<tr>
<td>Number of Channels Bonded</td>
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</tr>
<tr>
<td>Modulation</td>
<td>1024 QAM</td>
<td></td>
</tr>
</tbody>
</table>

*Fully Backward Interoperable*
Technology Evolution

- **MoCA 1.0** (2005) Field Tests
- **MoCA 1.1** (2006)
- **MoCA 2.0** (2007) Field Tests
- **MoCA 2.5** (2010)
- **MoCA Access™ 2.5** (2015)
- **MoCA 3.0 home mesh** (2016)
- **MoCA Wi-Fi® Mesh Field Tests** (2017)
- **MoCAsec™** (2018)
- **MoCA Evolution** (2019)