

Ascend

FAQ

Series56 Digital Modem

1. *What are Ascend's Series56 Digital Modems?*

The Series56™ Digital Modems are designed for the MAX™ family of products and are capable of 33.6 Kbps and 56 Kbps operation. They include the K56flex technology jointly developed by Rockwell Labs and Lucent Systems.

2. *What does the term "digital modem" mean?*

Basically, a digital modem accepts calls from analog modems across a digital circuit. A digital modem is either connected to a DS-0 on a channelized T1 line or a single B-channel on a PRI line. The digital modem can accept calls that originated from an analog modem, or send calls to analog modems directly. In either case, the connection between the analog modems and the digital modem use standard analog modem protocols, such as V.34bis.

3. *What is K56flex?*

K56flex is a 56 Kbps modem specification developed by Rockwell and Lucent, and is being backed by most major modem manufacturers, developers and implementers. It allows for 56 Kbps transfers from a digital modem to an analog modem on the downstream portion of the call and 33.6 Kbps on the upstream portion.

4. *Is there a 56 Kbps modem standard?*

The 56K modem standard available today is being supervised by the Open 56K Forum, which is a group founded by 28 companies, including Ascend. This forum represents over 70 percent of the modem communications industry. The Open 56K Forum is backing the protocol they believe is the most open and provides the best foundation for widespread interoperability, which is currently the K56flex specification.

5. *How does the Open 56K Forum standard compare to other standards like U.S. Robotics x2?*

The x2 protocol is not interoperable at 56 Kbps with the Open 56K Forum standard, which is based on K56flex. U.S. Robotics has been invited to join the Open 56K Group, but it has not yet decided to become a member. The Open 56K Forum will support any technology/protocol—including x2—that can be part of an open, interoperable solution. At this time, however, x2 is a proprietary specification from U.S. Robotics.

6. *Do the Series56 Digital Modems from Ascend work with x2 modems?*

The Series56 Digital Modems will work with the x2 modems, but not at 56 Kbps. Both the Series56 and x2 modems use V.34bis as the fallback protocol, so the two modems will connect using speeds of 33.6 Kbps or below.



7. *What sort of performance should I expect from the Series56 Digital Modems? Do they offer better performance than the existing modems?*

Performance from a Series56 modem to a remote K56flex-compatible modem can reach speeds of 56 Kbps, with the return path offering V.34bis speeds of 33.6 Kbps. Performance between a Series56 modem and any other non-56Kflex-compatible modem will operate at the highest rate possible by the other modem, including rates up to V.34bis rates. The new Series56 Digital Modem modules offer the 56K line rates, while existing digital modem modules do not have this capability.

In addition, Ascend has added a dedicated DSP to each Series56 module to efficiently handle the task of packetizing and aggregating incoming byte streams, and converting packets to bytes for outgoing traffic. This significantly offloads the central processor of the WAN access switch, which boosts system performance by allowing the WAN access switch to focus on tasks like packet forwarding and routing.

8. *The international 56K standard is not yet finalized. What happens if I buy Series56 modems and the specification changes?*

Fortunately, Ascend has already provided an architecture that is capable of keeping up with the standards. Ascend has implemented all of the new Series56 Digital Modems with a software-based upgrade option built-in. Therefore, if the standards change, new software can be loaded onto the Series56 modems to comply with the new standard.

Additionally, Ascend provides the capability to remotely upgrade software during system operation. This allows for centralized management of the entire network, allowing administrators to upgrade to the most current standards without disrupting service to the users.

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