Ascend

COMPETITIVE FLASH

BOARDWATCH 56K Cover Story: Fact or Fable?

Brief summary of article

In an article by Jack Rickert, *Boardwatch* headlines "odd findings and startling results" for their in-house test of x2 and K56flex. The study uses three computers and a "dialing engine" to call 323 POPs during peak hours, with a variety of modems, and record connection rates.

For the K56flex ports, *Boardwatch* reports average connect speeds of only 30.9 Kbps, and a call completion rate of 79%. For the x2 ports, the magazine reports an average connect speed of 45.2 Kbps, and a 90.4% completion rate. *Boardwatch* also reports that x2 connected at speeds over 40 Kbps 94% of the time, while K56flex connections over 40 Kbps were a seldom 6.5%.

Based on their test, *Boardwatch* concludes that "3COM/US Robotics x2 modem is very clearly the winner of he 56K battle at this point", and that performance will remain an issue after the V.90 standard is in place.

Ascend's Response: *This Boardwatch article is a "Fable of Contents"*

The *Boardwatch* "independent" test bed is severely flawed in one important respect: *All dial-up calls originated from the same line.*

The origination point (i.e. the local loop and the local CO switch) is the leading determinant of modem performance – especially 56K performance.

- The *Boardwatch* test design does not replicate real-world usage, where connections are initiated from all over the nation. Instead, *Boardwatch* chose to originate all calls from its office – a decidedly atypical situation.
- As Rockwell tried to explain on numerous occasions, different conditions favor different modems
  - Ascend and Rockwell have investigated. It's been found that if the digital pad is not configured optimally[1] 56K performance suffers.
  - Boardwatch is mistakenly generalizing their local results – making illogical conclusions.
- Rockwell duplicated the *Boardwatch* design, called the same ISPs from its Newport Beach office, and recorded far different results: 48 Kbps connect rates for both K56Flex and x2

In the Real World –Ascend's Customers Rate A+ in Call Success

Inverse Networking Technologies, an industry-recognized objective evaluator of Internet Service Providers, uses a test methodology that simulates the actual end user experience.

In February, Inverse gave two key Ascend customers an A+ rating: An A+ rating indicates a better than 95% average call success rate **across the United States:**

- The call failure (24 hour) rating for Erol's and MSN: A+

Resources:

Inverse article: http://www.inverse.net/news/pr_02-04-98.html

[1] see reverse for information on USWest digital pads

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Information on USWest Digital Pads

Rockwell has found that the padding in the switch on the “analog Build out” called the ‘digital pad” influences the performance of K56flex connections:

The digital pad should be set as follows:

All levels in reference to the 2-wire modem dialing into the network.

- -6 dB upstream
- -6 dB downstream

This provides optimum speeds of 46-48K on an inband T1.

Rockwell testing proved that if the RBOC puts anything other than the following, the 56K modulation will fail:

- 0 no pad
- -3 dB pad
- -6 dB pad

Upstream rates are not as sensitive.

USWest is going to try and implement an “ISP trunk type of type 98” as the de facto standard.

The loss of the cable pair is not as important to 56K performance as this digital controlled padding in the digital switch. However, if the loss is too great (greater than 14 dB) 56K will not work at all.

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