

5 REASONS TO CHOOSE THE E-LINK 1000EXR OVER COMPETING 70/80 GIGABIT WIRELESS SOLUTIONS

EXECUTIVE SUMMARY

70/80 GHz e-band products are being touted by many global mobile operators as an integral component in cellular backhaul networks. With the drive towards 4G technologies such as WiMAX and LTE supporting ever higher data rate multi-media applications such as mobile broadband internet, carriers are seeing tremendous cost and bandwidth constraints with their current backhaul solutions. E-band wireless is a mobile backhaul technology that offers scalable and flexible wireless backhaul at costs significantly less than alternative backhaul techniques.

The E-Link 1000EXR is the leading performance 70/80 GHz product, offering fiber-like data rates to one gigabit per second and beyond, significantly faster than can be supported in alternative copper or microwave radio wireless solutions and with significantly lower cost than buried fiber-optic cables..

This paper outlines five reasons why the E-Link 1000EXR is the natural choice over alternative 70/80 GHz wireless solutions.



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5 REASONS TO CHOOSE E-LINK 1000EXR

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REASON 1: THE E-LINK 1000EXR DELIVERS INDUSTRY LEADING WIRELESS PERFORMANCE

In the E-Link 1000 EXR, Aviat Networks has delivered the highest performance e-band radio available today. The product boasts the highest output power and the most sensitive receiver performance in the market, as shown in the table below comparing the system performance of leading, commercially available e-band radio products. Forward error correction is included as standard. Together these innovations deliver the highest system gain of any comparable product, resulting in an 11 dB link budget improvement over other leading Gigabit Ethernet radio products.



System Performance Comparisons of Leading E-Band Radio Products			
70/80 GHz Gigabit Ethernet Product	Output Power	Receiver Sensitivity (BER=10 ⁻⁶)	Link Budget (BER=10 ⁻¹² , 2 ft. antennas)
Closest Competitor	+17 dBm	-61 dBm	+180 dB
E-Link 1000EXR	+24 dBm	-64 dBm	+191 dB
E-Link 1000EXR's Advantage	7 dB	3 dB	11 dB

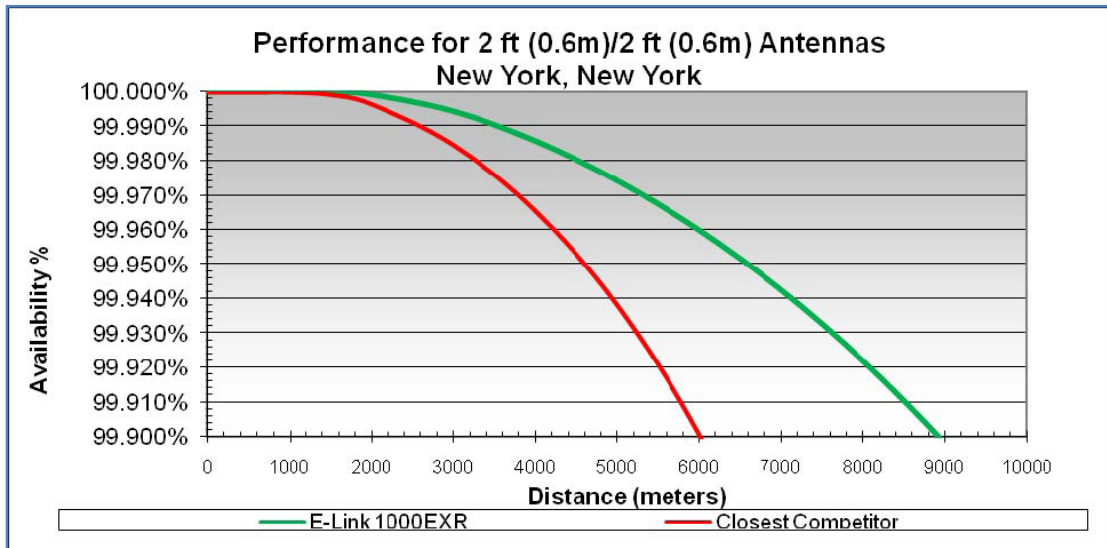
REASON 2: THE E-LINK 1000EXR DELIVERS THE LONGEST DISTANCE TRANSMISSIONS WITH THE HIGHEST SYSTEM AVAILABILITY

Because of its industry leading system performance, the 11 dB or more link margin advantage enables the E-Link 1000EXR to deliver the longest distance transmissions. In clear air (no rain) this link margin improvement will deliver a 3 to 4-fold increase in link distance over other products.

Under rain fade, the E-Link 1000EXR will remain able to transmit significantly longer than competitive products. This link margin improvement also allows the E-Link 1000EXR to operate with higher system availability than other products.

Thus links can be planned with more availability, yielding more system uptime resulting in improved customer connectivity and greater revenue generating potential. The graph below details this distance and availability advantage, comparing the link performance for leading, commercially available e-band products in New York.

For instance, the E-Link 1000EXR has an availability of 99.99% (denoted by the blue arrow in the chart below) at a distance of ~3550 meters (denoted by the black arrow in the chart below).

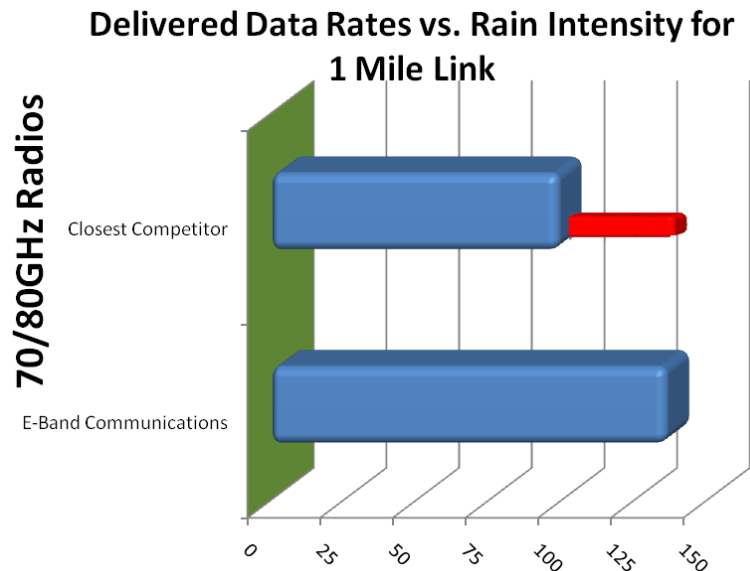


REASON 3: THE E-LINK 1000EXR DELIVERS THE LARGEST DATA THROUGHPUT

A key benefit of the E-Link 1000EXR’s improved system performance is that it delivers a full gigabit per second of usable customer data when other radios have throttled back data to one-tenth of the full rate to preserve connectivity, or have failed altogether.

Consider the performance of a 1 mile link of leading 70/80 GHz products under increasing intensity rain, as shown below. Most products will fail completely in a heavy downpour.

Those offering variable rates can provide additional connectivity, but at a 90% reduced rate of 100 Mbps. The E-Link 1000EXR surpasses all other products, being the only radio that can deliver a full gigabit Ethernet payload under the worst weather conditions.





REASON 4: THE E-LINK 1000EXR DELIVERS FIBER-LIKE PERFORMANCE

The E-Link 1000EXR is a layer-1 device, similar to a fiber optic cable. Other competing solutions operate at higher levels in the OSI stack, making them further removed as fiber optic cable replacements.

Operating as a layer-1 device, the E-Link 1000EXR is able to offer fiber-like latency of less than 5 μ s (versus up to 50 μ s for the closest competitor), plus support of 16,000 byte jumbo frames (versus support of only 1,600 for the closest competitor).

Operating at layer-1 also allows the E-Link 1000EXR to provide a bit error rate test (BERT), measuring the actual bit error rate of the layer-1 data throughput, rather than a Block Error Rate or Packet Error Rate as it is measured in layer-2 devices. Together these make the E-Link 1000EXR the closest fiber-like product in the e-band wireless space.

REASON 5: THE E-LINK 1000EXR OFFERS THE MOST COMPLETE CARRIER-CLASS FEATURE SET

In addition to the performance advantages already outlined, the E-Link 1000EXR offers a strong feature set that enables improved telecom carrier-class performance over other competitors in the 70/80 GHz bands.

Firstly, the E-Link 1000EXR operates from the telecom industry standard -48 V voltage source, without the need for external voltage converters.

Secondly the E-Link 1000EXR is the only e-band product that offers built-in support of the 1000Base-T copper gigabit Ethernet interface as well as 1000BaseT SX and LX multimode and single mode fiber support. Eliminating the need for external voltage and media converters reduces the overall cost of the equipment and improves the reliability (MTBF) of the overall solution.

Finally the E-Link 1000EXR operates over the widest temperature range of -33 to +55 °C, enabling operation in both the hottest and coldest climates of the world. A summary of how competing e-band products compare on these carrier-class requirements is detailed below.

Carrier Class Feature Set of Leading E-Band Radio Products		
Carrier Class Requirement	E-Link 1000EXR	Closest Competitor
Industry standard -48 V operation	YES	No
Built-in copper and fiber GigE interface support	YES	No
Full -33 to +55 °C temperature range	YES	No



SUMMARY

E-band wireless operating in the globally available 70/80 GHz bands offers wireless backhaul at costs significantly less than alternative backhaul solutions. Aviat Networks' E-Link 1000EXR offers fiber-like data rates to one gigabit per second and beyond, significantly faster than can be supported in alternative copper or microwave radio wireless solutions and with significantly lower cost than buried fiber-optic cables.

There are many reasons to choose the E-Link 1000EXR over other products in the e-band 70/80 GHz wireless space. These include:

- Industry-leading system gain
- Longest distance transmissions
- Highest link availability
- Largest data throughput
- Greatest resiliency to rain fade
- Closest operational characteristics to fiber optic cable
- Lowest latency
- Full jumbo frame support
- Industry standard voltage operation
- Widest temperature range
- Full gigabit Ethernet media interface support

Together these performance characteristics make the E-Link 1000EXR the most robust product of its kind and the performance leader in the e-band wireless space. The E-Link 1000EXR is the natural choice when considering a gigabit per second e-band radio product.

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