



StreamStar⁴



Alloyant
WIRELESS TECHNOLOGIES

Advanced Broadband Wireless Access System

Usage Scenarios & Applications

First Things First : **What is StreamStar⁴ ?**

StreamStar⁴ is a complete, integrated wireless service provider ecosystem – from core network to base stations and to subscriber terminals.

StreamStar⁴ serves multiple telecom services all in one: Broadband Internet & VPN, Video Surveillance, Digital Voice Telephony, SMS, Push to Talk, and Mobility.

Core Network Elements Voice – Data – Management



Radio Access Network Base Stations – Antenna Arrays



Subscriber Terminals (CPE)



Usage Scenario : Rural Broadband & Telephony, Part I

Rural Access is quite difficult. The areas involved are vast, and user density is low. With standard access technologies, a large number of sites is still needed to cover the vast areas – even if there are only a few users.

StreamStar⁴ solves this problem by providing far greater coverage than any conventional access system (GSM, WiMAX, CDMA etc.)

With StreamStar⁴ rural coverage is much easier to achieve – at least 3 times less physical base station sites are needed for coverage, dramatically cutting the CapEx and OpEx.



How?

StreamStar⁴ Smart Antenna gain is 18 dB on downlink, and 9 dB on the uplink.

In RF (and other signals, such as sound) propagation, each 6 dB doubles the distance (based on FSL, Free Space Loss)

With beamforming, StreamStar⁴ Smart Antenna provides at least a 3x advantage.

Usage Scenario : Rural Broadband & Telephony, Part II

With rural access, power consumption is critical – grid power may be unstable or even not available at all.

High power RF amplifiers need a lot of electrical power as well - a small GSM/UMTS base station with 60 W PA consumes at least 1500 W of power.

StreamStar⁴ tackles this problem as well – it does not rely on high power RF amplifiers to achieve high performance.



How?

StreamStar⁴ Smart Antenna downlink gain is 18 dB, which translates to 64 times more effective power. With just a 2 Watt PA, the actual power is equivalent to $2 * 64 = 128$ Watts, far more than any standard system.

Still, the peak BTS power consumption is just 500 Watts for a fully loaded BTS – easily powered by free, renewable energy such as wind and solar.