Valemount Networks Corporation
Network & Wireless Internet Solutions

Wireless Networking Solutions.
Ours Works.™

Powered by StarV3™

Advanced Performance
All units feature advanced RF functionality and processor optimization. Our RF drivers are proprietary and **built for performance**, not simply stock reference drivers lacking critical advanced features used by others.

Full Spectrum Support
Our Cloaking Mode 5MHz and 10MHz channel spacing and widths deliver up to **4 times the number of useable non-overlapping channels** in each frequency band compared to 'normal' 802.11 systems. Bandwidth delivery exceeds 6meg at even the smallest channel size.

High Bandwidth
The X4000 family are capable of delivering **up to 60 mbps** of compressible data in standard mode. Uncompressible data throughput exceeds 26 mbps in standard mode, and 43 mbps in turbo mode.

Unrivaled Feature Set
StarV3 delivers full routing capabilities including RIP, OSPF, and **high performance mesh networking** with OLSR. A full suite of QoS, security and management tools rounds out the StarV3 feature set with an **easy to use interface**.

Lucaya X4000 Series
Wireless Advanced Mesh Routers

The Lucaya X4000 family of high performance four radio wireless advanced mesh routers are ideal for a wide range of complex multi-role access, mesh, and point to point network deployments. Robust and dependable performance you expect, and require.

Product Highlights

- Features industry leading StarV3 powered operating system from StarOS.
- Your network depends on quality wireless links. The RF drivers we develop are the best in the industry with advanced features and performance found nowhere else. RF dependability and performance you can trust your network to; hundreds of thousands of successful installations worldwide attest to this fact.
- The combination of our proprietary RF drivers and 533MHz base board delivers the power to perform for all 4 radios simultaneously.
- Users can deploy any frequency combination covering the complete 2.4GHz through 6GHz radio spectrum on our powerful fully featured 23dB radios. Utilize the antennas of choice on the external N-Female connectors.
- Cloaking Mode enhanced channel widths and spacing delivers maximum network design versatility for large scale mesh and access networks.
- Our rugged hinged cast aluminum outdoor enclosure system provides both ease of use and dependable performance in the most challenging environments. The integrated articulating sector antenna mount and optional integrated omni antenna(s) allow for maximum deployment flexibility.
- Push button reboot with restore to factory defaults functionality.
- The onboard power system protects the unit against transients and overvoltage events on both the power and Ethernet systems.
- Dual surge protected Ethernet ports with Auto MDI/MDIX and full POE support from our switching power supply system.

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Lucaya X4000 Series Models

X4000	Connectorized system with 4 N-Female connectors
X4214	Integrated 14dB 2.4GHz antenna with 3 N-Female connectors
X4517	Integrated 17dB 5GHz antenna with 3 N-Female connectors.

Lucaya X4000 Series Certified Antenna Solutions

The following antennas are available for an FCC certified solution:

2.4 GHz	5 GHz
12 dB Sector	4.5/7dB Omni
14dB Sector/Panel	15 dB Sector
16 dB Sector	17dB Sector/Panel
18 dB Sector/Panel	23dB Panel
19dB Panel	

Applications

- Metropolitan scale MESH networks
- Traffic management systems
- Public safety access networks
- Video surveillance systems
- Campus networks
- Carrier backbones and extensions
- Corporate security systems
- WISP access networks
- Homeland security networks

- The X4000 family of wireless advanced mesh routers are **fully 802.11 standards compliant** and interoperable in your standards compliant network today.
- Each system is easily configured to take full advantage of the powerful StarV3 feature set. A unified StarV3 deployment allows the **full capabilities of the operating system** to become evident in the performance of your network.
- StarV3 **Enhanced Signal Processing** implementations coupled with our unique channel spacing in Cloaking Mode increase signal survivability in polluted (urban) environments. The same signal processing also increases weak link stability making marginal links profitable.
- Star V3 enhancements deliver reduced latency and jitter for significantly improved VoIP, video, gaming—and **overall improved network performance compared to other systems** available today.
- All customers receive **total service and support**. We treat customer networks like they were our own.

Operational Features

User Interface
⇒ Secure SSH
⇒ Telnet client
⇒ Command Line, with factory default reset

Access Layer Density
⇒ Up to 250 users per radio; 50 users per radio recommended

Security
⇒ Advanced firewall functionality with familiar Linux syntax or custom parser
⇒ StarV3 Cloaking Mode channel spacing
⇒ RADIUS client and server functionality
⇒ MAC address filtering and authentication with both local list and radius control
⇒ WPA1 and WPA2 with full radius control
⇒ TKIP and AES ciphers
⇒ 40, 104, and 128 bit WEP
⇒ NAT and static NAT support
⇒ IPMAP
⇒ Remote system logging

Routing Functionality
⇒ Mesh Networking with high performance OLSR

Routing Functionality (cont…)
⇒ DHCP server and client with dynamic leases
⇒ IEEE 802.11d bridging
⇒ Dynamic WDS support for true transparent bridging
⇒ High performance learning bridge with optional Spanning Tree Protocol
⇒ IEEE 802.1q VLAN
⇒ RIPv1 and v2, and OSPFv2 support
⇒ NAT and static NAT
⇒ Policy (source and purpose based) and static (destination based) routing support
⇒ VPN via proprietary distribution system with secure Ethernet over IP tunnels for up to 20 virtual VPN servers per unit
⇒ Multiple IP addresses per interface

Quality of Service
⇒ Full layer 2 and layer 3 traffic prioritization
⇒ Layer 7 filtering and shaping
⇒ Group, subnet, user, and protocol-based bandwidth shaping and prioritization with bandwidth fallback and parent class sharing
⇒ Simple asymmetrical/symmetrical bandwidth shaping option
⇒ Packet Aggregation for improved VoIP jitter and gaming latency

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Technical Specifications

Radio Operation

⇒ Each radio independently configured and controlled
⇒ Full operating frequency range
  2312 - 2737 MHz
  4900 - 6120 MHz
⇒ Channel width and spacing
  40 MHz turbo
  20 MHz
  10 MHz
  5 MHz
⇒ Custom Frequency Scan Lists
⇒ Radio disable functionality

Wireless

⇒ Standards
  IEEE 802.11a/b/g
  IEEE 802.11d
  IEEE 802.11e
  IEEE 802.11h
  IEEE 802.11i
⇒ Enhanced StarV3 Mode
⇒ Sensitivity
  2.4GHz = -92 dBm @ 1Mbps; -70 dBm @ 54Mbps
  5GHz = -90dBm @ 6Mbps; -70 dBm @ 54Mbps
⇒ Connection Rates
  108, 96, 72, 54, 48, 36, 24, 18, 12, 11, 9, 6, 5.5, 2, 1 Mbps
⇒ Advanced Features
  Extended range with advanced digital signal processing
  Weak signal processing and enhancement
  Advanced Rate Control for Error Correction support
  Adaptive Radio (AR/ANI) support
  Enhanced receive sensitivity
  Advanced RF filtering and blocking for enhanced channel spacing
  Best path sequencing for advanced multipath resistance
  Enhanced bursting
  Enhanced compression and fast frames
  Dynamic frequency selection (DFS) - DFS2 in final testing
  Transmit power control (TPC and aTPC)
⇒ Performance
  802.11a/b/g standard 20MHz Channel
  26+ Mbps uncompressible data standard mode
  43+ Mbps uncompressible data turbo mode
  60+ Mbps compressible data standard mode

  StarV3 Cloaking Mode
  5MHz channel spacing - over 6 Mbps uncompressible data
  10MHz channel spacing - over 13 Mbps uncompressible data

  Maximum Link Distance 230km

Processor

⇒ Intel XScale IXP425 network processor operating at 533MHz

Management

⇒ Remote firmware upgrade with full configuration preservation
⇒ Access unit, client, and network management displays and tools
⇒ Diagnostic tools including ping and throughput testing
⇒ Beacon real-time traffic monitor
⇒ Push button hardware reboot with restore to factory defaults functionality
⇒ SNMP Support and Statistics

Power Supply System

⇒ Autosensing 120/240 VAC, 50/60Hz input
⇒ 48 VDC output
⇒ World power system enabled
⇒ Solar and wind systems available in turn-key configurations

On-Board Protection Systems

⇒ Transient/overvoltage protection for both power and Ethernet subsystems

Environmental

⇒ Extended operating temperature: -20 to +70 C
⇒ Humidity: 5% to 95% non-condensing

Physical

⇒ 3.3 pounds
⇒ 9.3" x 9.25" x 4.05" (237mm x 235mm x 103mm)

Warranty

⇒ One year limited manufacturer defect warranty for all parts and labor

Current Branch

- Atheros Adaptive Radio
- Atheros Dynamic Turbo
- Atheros Auto channel selection support
- 802.11e QoS w/bursting and aggregation
- 802.11h (DFSv1 and DFSv2 for FCC3, ETSI, and MKK4)
- Dynamic WDS with full SuperAG and 802.11e support
- 802.11i

Certification

FCC ID:
VPN-LUCAYAM1INT

CE

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The X4000 and X4517 are now available.
Please contact us for sales and volume pricing.