SURVEILLANCE

013111

StarNSM Transmitter /Receiver

Using next-generation Wireless IP technology

With performance up to 15x faster than traditional 802.11b networks, many features of the new 802.16 specification, and all of the features in the new 802.11a (4.9 - 6.1 Ghz) and 802.11g (2.3 - 2.7 Ghz) specifications are standard to the StarNSM feature lineup. This board-level technology is what we use in our own "system builds."

Wireless IP specific features supported by StarNSM:

- Super A/G (Hardware compression, aggregation and bursting).
- Data throughput of 26 mbps in Standard and 43 mbps in Turbo, with such uncompressible data like zip or jpeg files.
- Data Compression for throughput approaching 60 mbps in Standard 54 mbps Mode.
- Packet Aggregation for improved VOIP and video latency.
- QOS packet prioritization for improved VOIP latency and jitter.
- 108Mbps TURBO (802.11a and 802.11g Channel Bonding)
- Advanced rate control for Error Correction support, providing reliable connections for both long-range links, and local access.
- Adaptive Radio (AR/ANI) support.
- Special Cloaking Mode with 5 MHz RF bandwidth and 5 MHz channel spacing available for all supported bands, using modified OFDM. This allows 11 non-overlapping channels in the 2.4 GHz band. Actual data throughput is 6.5 mbps or higher with compression. This mode cannot be seen by a standard wifi radio. Maximum distance is 230 km.
- Special Cloaking Mode with 10 MHz RF bandwidth and 10MHz channel spacing available for all supported bands, using modified OFDM. This allows six (6) non-overlapping channels in the 2.4 GHz band. Actual data throughput is 13 mbps or higher with compression. This mode cannot be seen by a standard WiFi radio. Maximum distance is 115 km.
- Full DFS v1 and TPC for the channels, and countries that require it.

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Advantages

- *Greater bandwidth*
- *Better link stability*
- *Better interference mitigation, including RF pollution and obstruction survival*
- *More latency and jitter reduction, important for video delivery*
- *The ability to aggregate backhaul links*
- *Unique 5MHz and 10MHz channel widths/spacing across 900MHz, 2.4/4.9/5GHz*
- *A Cloaking Mode that operates quite well directly in the face of interference generated from WiFi units like Cisco*
- *Far more available channels*
- *Immunity to eavesdroppers. StarNSM appears as just a bit of background noise to WiFi units --like Cisco -- and to anyone using WiFi equipment to attack a network.*
- *The ability to mesh network in a way far superior to what competing units can do*
- *The ability to scale without issue*
- *Versatility – you can use a combination of 900MHz, 2GHz, 4.9GHz (if applicable) and 5GHz in the same unit with our systems. So, if any issues with foliage or obstructions occur, you can use a 900MHz link to avoid them. One of our four (4) radio systems can handle combining feeds across all these frequency bands.*
- *And, finally, StarNSM is Affordable!!*

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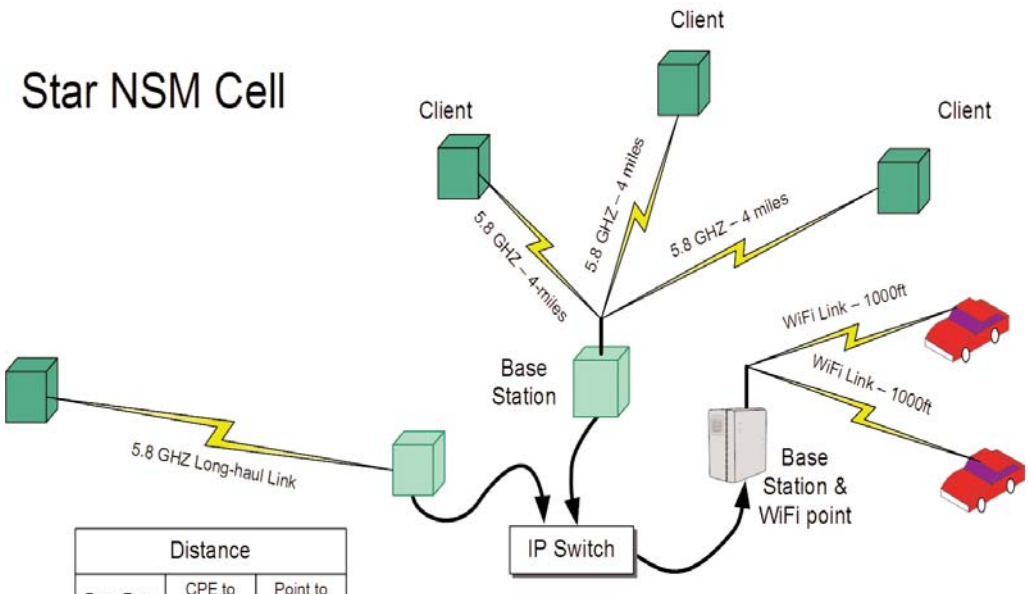
- Channel selections from 4.9GHz - 6.1GHz, and 2.3GHz - 2.7GHz providing support for both public and licensed bands.
- Option to restrict system to outdoor channel use only.
- 40, 104 and 128-bit WEP security.
- Access Control Lists (ACL) with local list.
- Dynamic WDS support for true transparent bridging.
- Ability to disable unused Wireless IP cards. Custom scan lists; prevent clients from scanning unwanted channels.
- v1.3.0 additions include:
- Enhanced Wireless IP Adaptive Radio (AR / ANI).
- Wireless IP Dynamic Turbo (also known as Turbo Prime and Friendly Turbo).
- Wireless IP Auto channel selection support.
- 802.11e (QoS w/ Bursting and Aggregation).
- 802.11h (DFS v1, and DFS v2 for FCC3, ETSI and MKK4).
- Dynamic WDS with full SuperAG and 802.11e support.
- Strives to be in compliance with known governing bodies.
- Complete 802.11i (WPA and WPA2/RSN).
- Radius-based ACL with full accounting and session limits.
- 'Managed' client / AP support for enhanced features and abilities.
- Enhanced rate manipulation providing better performance and robustness in face if interference and low signals.
- Sync support to automatically update all associated clients to the AP's new channel, cloaking and distance settings.

Partial list of supported StarNSM features:

- Fully field upgradeable, with no additional costs for firmware upgrades or technical support.
- Access Point association displays, with per-user, and system wide throughput and traffic reporting, plus more.
- Wireless Client support, connects to an AP for routed operation.
- Wireless Client Bridge support, connects to a named AP, and establishes a WDS connection for routed or bridged operation. (Requires a StarNSM AP)
- Multiple IPs per interface are supported.
- Static routing and policy (source) routing. You can now route based on the source IP or the traffic type, such as port 25 email.
- Full RIP v1/2 and OSPFv2 support.
- Mesh routing using OLSR.
- High performance learning bridge with optional STP (Spanning Tree Protocol)
- Network diagnostics tools such as Ping, tcpdump and Throughput testing.
- Beacon real-time traffic monitor
- SSH-based configuration interface with easy to use mouse-based UI.
- Serial-based CLI with ability to restore factory settings, and perform basic network testing.
- DHCP Server with Static and Dynamic Leases.
- DHCP Client.
- Full firewall, NAT and Bandwidth Management support.
- Layer-7 filtering and shaping.
- 802.1q VLAN support.
- VDS (Virtual Distribution System) support, with the ability to create secure Ethernet-over-IP (EoIP) tunnels between two systems, over a routed network. Tunnel devices can be routed or bridged.
- CBQ for bandwidth control per IP, range of IP or ports.
- Firewall, NAT and IPMAP for IP management and control.
- Recursive DNS for local name resolution
- Support for X86 NSM Standalone systems
- Compatible with NS9200 systems.
- PPPoE Server with Radius-based authentication
- v1.3.0 additions include:
- SNMP Support w/ 802.11 association and signal information.
- HotSpot authentication and control.



Distance		
Data Rate	CPE to Base	Point to Point
6mbs	24.1 km	48.2 km
36 mbs	6.4 km	48.2 km
54 mbs	2.8 km	22.5 km

Product specifications are subject to change.

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