Pulse Supply
pulsesupply.com

STARPLUS

HIGH-PERFORMANCE MIMO OUTDOOR WIRELESS PRODUCT FAMILY

MORE RANGE.
MORE REACH.
MORE SUBSCRIBERS.

STARPLUS 1120 CPE
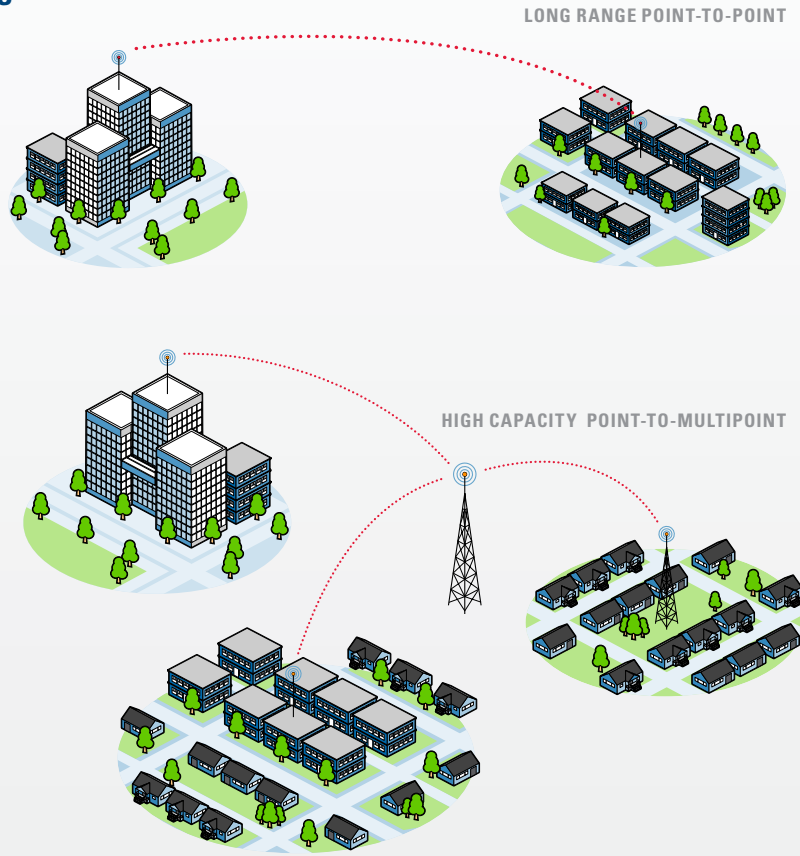
STARPLUS 5300/7300 ACCESS POINT

STARPLUS 1110 CPE

STARPLUS

5.X GHZ HIGH-PERFORMANCE OUTDOOR WIRELESS

An advanced outdoor wireless Point-to-Point and point-to-Multipont product family, StarPlus is built on more than a decade of OFDM experience. The 2 x 2 multiple-in, multiple-out (MIMO) capable radio delivers superior throughput for bandwidth hungry 3G and 4G customers. Packaged in a rugged, all weather enclosure, the full-featured StarPlus comes complete with integrated bridging and routing software and extensive network and polling management support. With its high spectral efficiency, large capacity, user friendly GUI and rich feature-set, the StarPlus family of products provides the ideal point-to-point and point-to-multipoint solution for rural and metropolitan wireless network requirements.

PERFORMANCE OPTIMIZED

The StarPlus Access Point combines a powerful +26 dBm radio, advanced OFDM technology and a highly sensitive receiver to create a long-range, high-throughput product. OFDM offers many advantages, including effective use of bandwidth, resistance to interference, ability to take advantage of multi-path characteristics, and advanced error correction and recovery. The high spectral efficiency of the MIMO OFDM radio is capable of delivering up to 300 Mbps of bi-directional point-to-point throughput.

STARPLUS PRODUCT FAMILY

	StarPlus 1110-58	StarPlus 1120-58	StarPlus 7300-58	StarPlus 5300-58
Topology	Point-to-Multipoint CPE	Point-to-Multipoint CPE	Point-to-Multipoint AP	Point-to-Point
Antenna	17 dBi MIMO	18 dBi	2 x N-type	2 x N-type
Frequency	5.005 to 5.995 GHz	5.005 to 5.995 GHz	5.005 to 5.995 GHz	5.005 to 5.995 GHz
Max. Tx Power	18 dBm	18 dBm	26 dBm	26 dBm
Line Rate	108 Mbps, 300* Mbps	108 Mbps	108 Mbps, 300* Mbps	108 Mbps, 300* Mbps
Effective Throughput	75, 100* Mbps	75 Mbps	75, 240* Mbps	75, 240* Mbps
Enclosure	All-outdoor, ABS/PC, Flame retardant, UV resistant, IP 53	All-outdoor, ABS/PC, Flame retardant, UV resistant, IP 67	All-outdoor, Die Cast NEMA 4x; IP67	All-outdoor, Die Cast NEMA 4x; IP67

* Requires firmware upgrade

TRUSTLINK™ ADVANTAGES

Trustlink is a proprietary protocol developed by EION Wireless. TrustLink is specifically designed for high-throughput outdoor, multimedia rich applications. It provides several advantages for outdoor wireless communication that improve factors such as interference avoidance, spectral efficiency and wireless security and add Quality of Service.

TRUSTLINK DYNAMIC POLLING

EION's proprietary TrustLink technology uses proprietary polling methods to ensure equitable distribution of traffic to all subscriber stations. The advantage of the TrustLink system is that the polling is assigned in real time, dynamically adapting to different traffic conditions.

In brief, the Access Point performs a central control on the RF channel by polling the remote users (subscribers) in a round-robin fashion. If the polled user has data to send, then it immediately sends the data to the base station; otherwise, it keeps silent, in which case the base station will timeout and then starts to poll the next user. Remotes need not have a communication path between them. With this polling action occurring, each station gets their opportunity to transmit data to the master station. This is done in a sequential format, first remote station#1, then #2, then #3 etc. When all remotes have been given their opportunity to communicate, the process repeats itself, again and again.

The TrustLink system uses intelligence to determine the number of polling cycles every user gets depending on the level of its activity. This way the network resources are not wasted during the polling of inactive users due to no user data transmission. A mechanism TrustLink is also provided for an inactive user to become active and to resume its data transmission. The variation of polling cycles also has the potential support a greater total number of CPEs.

TRUSTLINK QOS
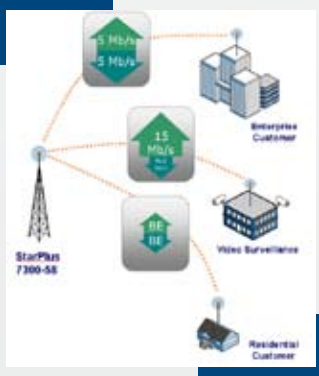
TrustLink has also been enhanced to support QoS. Downlink, and Uplink throughput to a remote user can be monitored and controlled by the Access Point. Polling cycles, and transmit opportunity time can be intelligently controlled by the Access Point to provide guaranteed maximum throughput. Any throughput not configured for a particular remote user, is then shared fairly to all other stations configured in Best Effort (BE) mode.

With Quality of Service (QoS), operators can assign a maximum uplink and a maximum downlink throughput on a CPE by CPE basis. Any CPE without a defined QoS profile will receive Best Effort service, which shares the available bandwidth equally to all remaining clients. This feature can be used to supply bandwidth to meet end user requirements, fulfill specific applications and to meet SLAs. The QoS if fully configured at the AP (Base Station) radio and is based on the MAC address of the CPE (client).

TRUSTLINK ROBUST INTERFERENCE HANDLING

In designing StarPlus interference handling algorithms and techniques, EION engineers built on the strengths of the Ultima3 to create a truly robust radio that is not prone to interference. At the heart of the interference mitigation is EION's proprietary polling technique which is constantly working to improve the link quality to each individual CPE so that the same interference robustness is realized in Point-to-Point and Point-to-Multipoint modes of operation.

The unique polling algorithm in the StarPlus was strengthened so that it can push through and penetrate the most challenging RF environments and establish a strong RF link. In developing the latest release of the product we field tested the new software load in some of the most difficult and noisy environments we could find around the world. Our testing included locations in North Africa, Mexico and the Middle East and in each case we were able to prove that the TrustLink was able to get the job done where other equipment had failed.

MORE TRUSTLINK THROUGHPUT

With physical data rates of 108, 150 and 300 Mbps, and up to 240 Mbps of usable throughput, StarPlus easily exceeds 4G requirements. TrustLink enhances the already high spectral efficiency of the StarPlus radio by avoiding packet collision and increasing overall system performance.

TRUSTLINK AUTOMATIC DATA RATE SELECTION

With automatic data rate selection, TrustLink is able to keep the overall wireless throughput at a maximum for the current conditions. Multipoint and Point-to-Point links automatically select the highest sustainable data rate based on weather conditions. TrustLink delivers the most throughput available from the given conditions every time.

Gbps

TRUSTLINK FAST FRAME PACKET AGGREGATION

Each individual packet in an IP stream contains a large amount of overhead data for management functions. When Fast Frame Packet Aggregation is enabled, StarPlus combines several packets together into a single jumbo packet. The end result is less management overhead as the packet passes over the wireless link, and of course higher overall throughput.

NARROW BAND CHANNELS (5 & 10 MHZ)

The 5 and 10 MHz narrow channel sizes in the StarPlus simplify sector planning for large multipoint networks by increasing the number of channels available in the supported band. For point-to-point connections, the narrow channel size provides a robust connection for long link distances due to an improved signal-to-noise ratio and better resilience to delay spread.

EXTENDED FREQUENCY SUPPORT

StarPlus provides frequency coverage for more than the standard license-free ISM band. The StarPlus covers the complete 5 GHz range from 5.005 to 5.995, which includes the limited ISM band. This allows licensed operators to take advantage of unused spectrum in countries that allow it. In addition to the extended frequency support, StarPlus contains a 20 MHz normal mode and a bandwidth boosting 40 MHz turbo channel size. The available channels in the radio are controlled via a frequency key that is loaded into the radio unique to each radio unit.
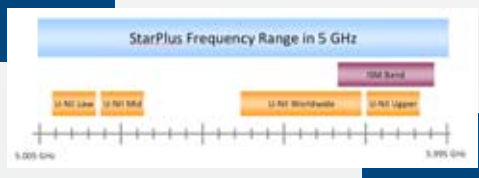
BUILT-IN SPECTRUM ANALYZER

The built-in spectrum analyzer providers the user with real-time feedback of the link characteristics through the GUI. This feature can be used to detect interference with other devices and to finely tune the radio for optimal performance in the field.

SOLID MULTI-LAYER SECURITY

StarPlus features multi-layer security features to prevent eavesdropping and hacking from undesired intruders. StarPlus provides protection of over-the-air transmissions with 128-bit AES encryption at full line speed. For increased security, the StarPlus also supports 152-bit WEP and WPA. The rugged all-weather enclosure allows co-location on rooftops and masts limiting physical access.

COMPREHENSIVE NETWORK MANAGEMENT

StarPlus takes a carrier-grade approach to network management with a rich Graphical User Interface (GUI) that displays a network level view of device and link status including comprehensive operator maintenance reports and RF diagnostics. No special software is required, because the management interface runs in a standard web-browser window. Support for SNMPv2 provides a standard management interface for advanced network operators. Using these management features, a network administrator can easily control a large StarPlus wireless network from a single central location. EION's Enterprise MIB allows the monitoring of RF statistics like power, RSSI, and modulation. and allows complete configuration of the StarPlus though SNMP Set commands.

802.1Q VLAN & VLAN MANAGEMENT

VLAN allows the network administrator to plan and segment a network into multiple, Virtual Local Area Networks (VLAN). Through the use of VLAN tagged Ethernet packets and the processing rules the radio applies, you can determine access and traffic patterns, and increase network security and provide customer separation without the use of additional hardware.

Using the VLAN Management feature in a StarPlus, network management and access to the Graphical User Interface can be separated to only those computers on a specific VLAN. This adds another layer of security to the StarPlus wireless network and prevents tampering of the link characteristics from malicious users.

SIMPLE INSTALLATION AND MAINTENANCE

The StarPlus family is designed to be easy to use, install and manage. The cost of deploying a wireless network is more than the cost of equipment. The cost of installation and maintenance can have a significant impact on Return on Investment (ROI). To aid installation, a real-time signal strength (RSSI) indicator is accessible through the GUI interface. Remote management ability and over the air software upgrades virtually eliminate the need for expensive on-site support calls.

StarPlus Access Point radios have the functionality of DHCP server and CPE radio have the functionality of DHCP clients to simplify IP configuration.

DUAL BANK FIRMWARE WITH SAFETY ROLLBACK

Remove the risk of bad upgrades with the dual bank firmware option. StarPlus maintains two firmware loads at all times, so if a firmware upgrade is corrupted or interrupted, the radio operation is not affected, simply restart the upgrade process. When switching to a new firmware users have the option of using a failsafe mode that will revert to the original firmware if there are any issues with new settings on the upgraded firmware. These features minimize network downtime when performing a firmware upgrade.

UPLOAD AND DOWNLOAD CONFIGURATION

This feature allows the user to download a file though the GUI interface that contains all of the configured parameters in the radio. This file can be archived for backup and disaster recovery requirements, or can be used as a template to configure a large number of CPEs.

WEB-BASED UPGRADE KEY LOADING AND CONFIGURATION MANAGEMENT

Firmware upgrades don't need to be complicated. With new features in the StarPlus, firmware upgrades can be loaded directly into the GUI without the need for FTP servers or TFTP loaders. The same goes for license key management and backup configurations. Of course FTP upload is still available for those users who prefer to manage bulk upgrades with automated SNMP scripting.

AUDIBLE ANTENNA ALIGNMENT

When the audible antenna alignment option is enabled, the radio emits a series of audible tones that correspond to the RSSI level of the CPE. Using this feature it is very easy for a lone installer to obtain the optimum radio alignment without logging into the GUI. The antennal alignment beeper has been improved to uses a coded series of beeps to indicate discrete RSSI levels from -90dBm to -60dBm 2dB increments. As the operator hears more and longer beeps they know that the signal is improving.

NETWORK STATISTICS

The link monitor screen shows the actual payload of each radio in kilobytes per second to give users a better grasp on what is passing through each node of the network. These statistics are reported along with network statistics and RF statistics.

RUGGED CONSTRUCTION

All of the electronics for the AP are secured in a rugged metal die cast enclosure designed to the IP67 specification. The enclosure is rated for outdoor operation in temperatures from -35° C to +70° C, and sealed against all environmental conditions to protect against wind, rain, snow, humidity and extreme temperatures. With the included hardware, the outdoor unit can be mounted to a wall, pole or tower.

CONTACT US