# JF-12 Certified StarPlus 4448
## Broadband Wireless Security Platform

## OVERVIEW

The StarPlus 4448 Broadband Wireless Security Platform is designed for federal government agencies and military organizations to create a highly secure broadband wireless infrastructure. StarPlus 4448 combines advanced OFDM technology with strong AES encryption to deliver breakthrough performance in the licensed NATO band.

With the application of a multiple association software key, the Point-to-Point StarPlus 4448 can be upgraded to operate in a point-to-multipoint mode for wide area coverage. The flexible StarPlus 4448 is the ideal wireless platform to meet the exacting requirements placed on national security infrastructure.

The StarPlus 4448 base radio is packaged in an IP67 ruggedized enclosure is suitable for all weather conditions. The specialized design of the finned enclosure allows for stable operation in high heat environments while the integrated vent plug protects electronics in high humidity conditions. The thick all-metal enclosure provides high EMI immunity for stable operation and secures communications in hostile environments.

## JF-12 CERTIFIED

Eion Wireless received JF-12 certification from the U.S. Army Spectrum Management Office for its communication radios.

Users of spectrum-dependent radio equipment for transmitting alarm signals to an on-site alarm monitoring center must have a formally approved RF authorization or license assignment from the appropriate local radio spectrum manager or responsible authority before operating the equipment.

The JF-12-compliant EION radios can now be deployed by the U.S. Coast Guard, U.S. Army and Department of Energy (DoE) facilities.

## PRODUCT FEATURES

- Point-to-Point and Point-to-Multipoint Topologies
- EION TrustLink™ Technology for security and speed
- AES Encryption
- 4.4 to 4.8 GHz licensed range for operation in the NATO frequency band
- 40 & 20 MHz Channel Sizes
- 10 MHz Narrow Bandwidth Channel Size
- NLOS Urban Coverage with OFDM Technology
- User Friendly Web-Based GUI
- SNMPv2 and Enterprise MIB for Advanced Network Management
- High Spectral Efficiency and Robust RF Network Performance
- Rugged Construction for All Weather Conditions
- Built-in Lightning, Power Surge POE Protection, High EMI Immunity

## RADIO SPECIFICATION

| | |
|---|---|
| **Topology** | Point-to-Point (Default)<br>Point-to Multipoint Access Point (Requires Upgrade Key) |
| **Frequency*** | 4.400 to 4.800 GHz |
| **Channel Size*** | Half: 10 MHz; Normal: 20 MHz; Turbo: 40 MHz |
| **Modulation** | BPSK, QPSK, 16-QAM and 64-QAM |
| **Signaling Rate** | Up to 108 Mbps |
| **Antenna** | N-type female antenna connector |
| **Output Power†** | +14 dBm to + 20 dBm, configurable in 1dB steps |

| **Receiver Sensitivity** $(BER = 10^{-6})$ +/- 2dB | **Modulation** | **10 MHz** | **20 MHz** | **40 MHz** |
|---|---|---|---|---|
| | BPSK | -93 dBm | -91 dBm | -89 dBm |
| | 16-QAM | -83 dBm | -81 dBm | -79 dBm |
| | 64-QAM | -73 dBm | -71 dBm | -69 dBm |

| | |
|---|---|
| **Duplexing Format** | Dynamic Time Division Duplex (TDD), Half-Duplex |
| **Medium Access Control** | Proprietary MAC, TrustLink™ |
| **Data Rate Selection** | Dynamic Adaptive Modulation per Link or manually programmed to fixed modulation type |

† Maximum power output is set by country specific licensing key. The operator of this product must ensure compliance when selecting external antennas with the limits specified by local regulation prior to deployment

* Frequency bands that are available to the operator are determined by country specific licensing key.

## NETWORK SPECIFICATIONS

| | |
|---|---|
| **Network Connection** | Auto MDI-X RJ45 10/100 Mbps Ethernet, Manual duplex settings 10/100, Full/Half Dulplex, Over-ride auto negotiation on Ethernet port |
| **Operational Mode** | Transparent Bridging (per OSI Layer2), Multicast |
| **Traffic Management** | Advanced QoS with multiple service flows and classifier priorities - VLAN ID (802.1q), VLAN Priority (802.1p) and DSCP/ToS |
| **Fast Frame Aggregation** | Yes |
| **Sector Locking** | Yes, configurable black or white Access Control Lists. |
| **VLAN** | Data Tagging/Untagging, 802.1q transparency, VLAN Management, QinQ |
| **NAT** | 1:N NAT configurable through CPE GUI |
| **DHCP** | DHCP server for LAN devices when in NAT mode |
| **UL/DL Capacity Adjustment** | Manual TDD Split for better operator control over UL/DL capacity ratio definition |

## SECURITY

| | |
|---|---|
| **Management Access** | Username and Password<br>Compatible with all modern web browsers and Windows 7 OS |
| **Encryption** | WEP (64, 128, 154), WPA1 (TKIP), WPA2 (CCMP - AES 128, CBC-MAC for headers).<br>Encryption is available in factory firmware and firmware upgrades |

## MANAGEMENT

| | |
|---|---|
| **Management Access** | Over the Air & Wired over prioritized ports |
| **Remote Monitoring** | HTML Web-GUI, SNMP v2c (Set, Get and Traps with proprietary MIB)<br>MIB files are available from eionwireless.com |
| **Installation Management** | Wireless Link Monitor and Diagnostic Tool;<br>• Provides noise and RSSI signal levels as well as other statistical information<br>• Measure signal strength at each StarPlus location<br>• Real-time view of available over the air bandwidth<br>• Real-Time Link Quality Metrics<br>Audible Antenna Alignment Beeper (can be switched on or off via SNMP or web GUI)<br>Built-in Spectrum Analyzer |
| **Backup Configuration** | Save Radio Configuration to local PC |
| **Software Upgrade** | Over the Air or local, Web-based upgrade, Dual bank to allow rollback |

## PHYSICAL, ELECTRICAL & ENVIRONMENTAL

| | |
|---|---|
| **Power Consumption** | Typ. < 12 Watts |
| **Power Supply** | 100-240V, 50/60 Hz AC; UL/CSA approved 48 Volt POE system; DC power options available. The included power supply includes one standard Ethernet port for connection to LAN or local PC, and one PoE port for connection to the StarPlus equipment.<br>Power supply is 10/100 BaseT IEEE802.3 complaint with data rates up to 100 Mbps full duplex on both ports |
| **Temperature Range** | Operating: -40º C to +60º C<br>Storage: -40º C to +90º C |
| **Relative Humidity** | Operating: 0% to 100% (condensing); Storage: Max. 90% (non-condensing) |
| **Mounting Bracket** | Pole mounting hardware included |
| **Enclosure** | Single Unit, Die Cast Metal NEMA 4x; IP67, Finned for heat dissipation |
| **Weight** | 3.2 kg |
| **Dimensions** | 229 mm × 191 mm × 76 mm |
| **Lightning Protection** | Integrated, Telcordia GR-1089 compliant (Meets IEC 61000-4-2/ 4-4) |

## STANDARDS COMPLIANCE

| | |
|---|---|
| **Weatherproofing** | IP67 when properly installed |
| **Materials Compliance** | RoHS/WEEE |
| **Ethernet Standards** | Complaint to IEEE 802.3i-1990 for 10 BaseT<br>Complaint to IEEE 802.2u-1995 for 100BaseT |

## ORDERING INFORMATION

| | |
|---|---|
| **4448-00-ER** | StarPlus 4448 - 4.4 to 4.8GHz Connectorized N-Type |
| **7300-58-00-01** | StarPlus Multiple Association License Key - 3 Devices |
| **7300-58-00-02** | StarPlus Multiple Association License Key - 10 Devices |
| **7300-58-00-10** | StarPlus Multiple Association License Key - Unlimited Devices |

## BOX CONTENTS

| | |
|---|---|
| **Each Box Contains the following items** | • StarPlus 4448 Wireless Radio<br>• 48V PoE Injector<br>• Pole mounting bracket<br>• Grounding Lug<br>• Ferrite Bead<br>• Quick Start Guide |