TeraLink 5400
867 Mbps 2 x 2 MIMO Outdoor Base Radio

OVERVIEW

TeraLink 5400 is a 2 x 2 MIMO, IEEE802.11ac Access Point that provides outdoor Point-to-Point and Point-to-Multipoint Topologies at signaling rates up to 867 Mbps. TeraLink 5400 is designed for wide area coverage.

The TeraLink 5400 is optimized for long distance point-to-point links. In point-to-multipoint mode 5400 has significantly longer range and increased coverage capabilities over conventional Wi-Fi Access Points due to a number factors working in concert. These factors are but not limited to the MIMO diversity advantage, increased output power, high antenna gains.

For connection into the network the two Gigabit Ethernet interface on the TeraLink 5400 can connect to a wired backbone.

EION TeraLink can be configured as a standalone access point, or as part of a group of APs managed by EION's Network Controller or setup as point-to-point links. With up to eight different SSIDs per AP, TeraLink products can form a powerful 3G/4G offload solution for service providers and enterprises.

The TeraLink 5400 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

PRODUCT FEATURES

- Point-to-Point and Point-to Multipoint Topologies
- 2 x 2 MIMO Technology, up to 867 Mbps
- IEEE 802.11ac compliant and Backward compatible with 802.11a/b/g/n
- Supports Spatial Multiplexing, Cyclic-Delay Diversity (CDD), Low-Density Parity Check (LDPC) Codes, Maximal Ratio Combining (MRC), Space Time Block Code (STBC)
- Supports IEEE 802.11d, e, h, l, k, r, v time stamp, and w standards
- Supports Dynamic Frequency Selection (DFS)
- 80, 40 & 20 MHz Channel Sizes
- NLOS Urban Coverage with OFDM Technology
- User Friendly Web-Based GUI
- SNMPv3 and Enterprise MIB for Advanced Network Management
- High Spectral Efficiency and Robust RF Network Performance
- Rugged Construction for All Weather Conditions
- Built-in ESD Protection with ESD/EMP Immunity, Power Surge POE Protection.

ORDERING INFORMATION

5400-58-10-00	TeraLink 5400 5.x GHz, Ruggedized, Extended Range
5400-58-20-00	TeraLink 5400 5.x GHz, Ultra Ruggedized, Extended Range
5400-58-30-00	TeraLink 5400 5.x GHz, Ruggedized, 24 dBi Integrated, Rapid Deployment
5400-58-40-00	TeraLink 5400 5.x GHz, Ruggedized, 19 dBi Integrated, Rapid Deployment

RADIO SPECIFICATION

Topology	Point-to Multipoint OR Point-to-Point
Frequency*	5180 MHz to 5320 MHz ; 5500 MHz to 5825 GHz
Channel Size*	20 MHz ; 40 MHz ; 80 MHz
Modulation	OFDM : BPSK, QPSK, 16-QAM 64-QAM and 256-QAM
Signaling Rate	Up to 867 Mbps
RF Connectors	2 x N-type female antenna connector OR Integrated Antenna Option
Output Power	Up to + 27 dBm (aggregated 30dBm), configurable in 1dB steps

Receiver Sensitivity (BER = 10^{-6}) +/- 2dB	**Modulation**	**20 MHz**	**40 MHz**	**80 MHz**
	BPSK	-94 dBm	-93 dBm	-89 dBm
	16-QAM	-86 dBm	-83 dBm	-78 dBm
	64-QAM	-71 dBm	-74 dBm	-71 dBm
	256-QAM	N/A	-71 dBm	-68 dBm

Duplexing Format	Dynamic Time Division Duplex (TDD), Half-Duplex
Medium Access Control	IEEE 802.11ac
Data Rate Selection	Dynamic Adaptive Modulation per Link

NETWORK SPECIFICATIONS

Network Connection	2 x Gigabit Ethernet ports ; Auto MDI-X RJ45 10/100/1000 Mbps Ethernet
Operational Mode	Transparent Bridging (per OSI Layer2), Multicast
Traffic Management	Advanced QoS per user (Hotspot Mode), Standard WMM
MAC Filtering and Firewall	Filtering through Standard MAC address, Firewalls - Zones
VLAN	Data Tagging/Untagging, 802.1q transparency, VLAN Management; SSID to VLAN Mapping
NAT	1:N NAT configurable through CPE GUI
DHCP	DHCP Client , DHCP server for LAN devices when in NAT mode, PPPoE, L2TP
IPv6	IPv6 pass through in bridge mode
Routes	Add static Routes
Operation Mode	Standalone, Hotspot, EION AP Controller

SECURITY

Management Access	Username and Password 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). 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 v3c (Set, Get and Traps with proprietary MIB) MIB files are available on request
Installation Management	Wireless Link Monitor and Diagnostic Tool; • Provides noise and RSSI signal levels as well as other statistical information

	• Real-time view of available over the air bandwidth • Real-Time Link Quality Metrics • Built-in Spectrum Analyzer
Backup Configuration	Save Radio Configuration to local PC
Software Upgrade	Over the Air or local, Web-based upgrade
Services	Auto Reboot, Ping Watchdog

PHYSICAL, ELECTRICAL & ENVIRONMENTAL

Power Consumption	Typ. < 10 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 Gigabit Ethernet port for connection to LAN or local PC, and one PoE port for connection to the TeraLink equipment. Power supply is 10/100/1000 BaseT IEEE802.3af/at complaint with data rates up to 1 Gbps full duplex on both ports
Temperature Range	Operating: -20º C to +70º C 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	2.2 kg (External Antenna) 3.4 kg (Integrated Antenna – 19i option) 4.06 kg (Integrated Antenna – 24i option)
Dimensions	230 mm × 230 mm × 65 mm (External Antenna) 300 mm × 300 mm × 85 mm (Integrated Antenna – 19i option) 386 mm x 386 mm x 116 mm (Integrated Antenna – 24i option)
Lightning Protection	Integrated, Telcordia GR-1089 compliant (Meets IEC 61000-4-2/ 4-4)

STANDARDS COMPLIANCE

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Weatherproofing	IP67 when properly installed
Compliance	RoHS/WEEE FCC Part 15 Industry Canada Spectrum Management and Telecommunications Radio Standards Adheres to RSS-210 Issue 8 License-exempt Radio Apparatus (all frequency bands): Category 1 Equipment

INTEGRATED ANTENNA

The specifications below apply to the optional integrated antenna that is included with the StarPlus 5300. The unit can optionally be purchased with 2x N-Type antenna connectors for use with an external antenna.

Gain	19 dBi	24 dBi
Radiation	Directional	Directional
Frequency Range	4.9 -5.9 GHz	4.9 -5.9 GHz
Polarization	Dual – Polarization	Dual – Polarization
Azimuth-3dB Beam Width	Horizontal (Port 1): 17 degrees Vertical (Port 2): 17 degrees	Horizontal (Port 1): 8 degrees Vertical (Port 2): 8 degrees
Elevation-3dB Beam Width	Horizontal (Port 1): 17 degrees Vertical (Port 2): 17 degrees	Horizontal (Port 1): 8 degrees Vertical (Port 2): 8 degrees

Isolation	-40dB (Max)	-40dB (Max)
Front-to-Back Ratio	-25dB (Max)	-40dB (Max)
VSWR	Horizontal (Port 1): <1: 1.87 Vertical (Port 2): <1: 2.00	Horizontal (Port 1): <1: 1.5 Vertical (Port 2): <1: 1.5
Cross Polarization Isolation	-27dB (Max)	-30 dB (Max)
Side Lobe	< -12dB	< -12dB

INTEGRATED ANTENNA GAIN PLOT 19 DBI
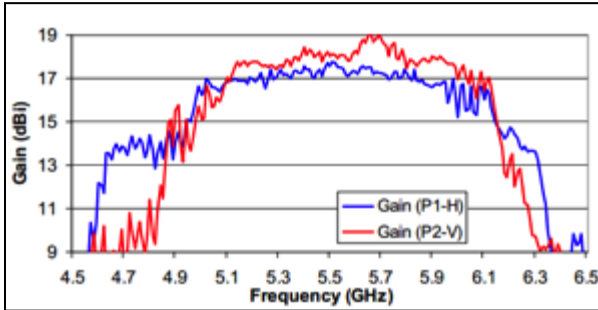
INTEGRATED ANTENNA POLAR PLOTS 19 DBI
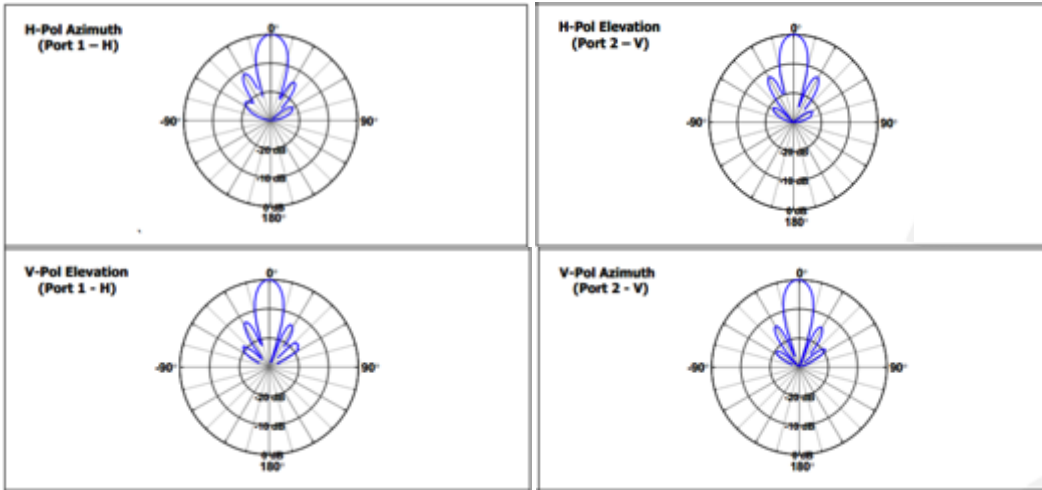
INTEGRATED ANTENNA POLAR PLOTS 24 DBI

VERTICAL POLARIZATION   **HORIZONTAL POLARIZATION**

RF Patterns Vertical Cut, Typ.   RF Patterns Horizontal Cut, Typ.   RF Patterns Vertical Cut, Typ.   RF Patterns Horizontal Cut, Typ