

Technology for fast, sustainable wireless.

Grow Smart. Reject Noise. Save Spectrum.

Wireless Renaissance

Broadband internet has evolved to be a necessary utility to live in today’s modern world. Wireless is capable of delivering fiber speeds at a fraction of the time and cost of a fiber connection. We are upon a Wireless Renaissance and it’s driven by the virtually endless demand for more and more bandwidth everywhere. It seems like the perfect match of demand and technology - but there is one major problem.

THE PROBLEM: RF POLLUTION

RF pollution is at an all-time high due to the enormous amount of RF noise created by today’s poorly designed hardware. Noise is usually the result of RF signals that travel too far, in unwanted directions or with wrong signal timing. This massive amount of noise is a consequence of millions of radios deployed over the last decade with zero respect for sustainability.

Vendors keep offering and WISPs keep deploying the wrong, out-dated gear, in an inappropriate way, creating wireless networks that hardly work as they should. Without a solution to massive RF pollution problem, the Wireless Renaissance will never happen in the expected scale.

THE SOLUTION: RF ELEMENTS® TECHNOLOGY

RF elements technology delivers fast, massively scalable wireless while addressing the issue of RF pollution, proper use of spectrum and sustainable growth. Unique approach makes RF elements technology excellent in rejecting noise, eliminating RF system loss and achieving massive scalability of wireless networks.



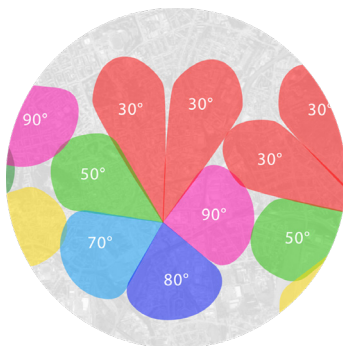
NOISE REJECTION

RF elements horn antennas have no side lobes and are immune to RF noise. They are the market leader in performance, cost, and spectrum efficiency.



ZERO LOSS

RF elements’ proprietary TwistPort™ connector with no RF cables is virtually lossless and makes radio installation ridiculously easy - just “twist and lock”.



MASSIVE SCALABILITY

RF elements products allow you to deploy more sectors with higher density and thus multiply the throughput of your network at no premium cost!

Noise Rejection

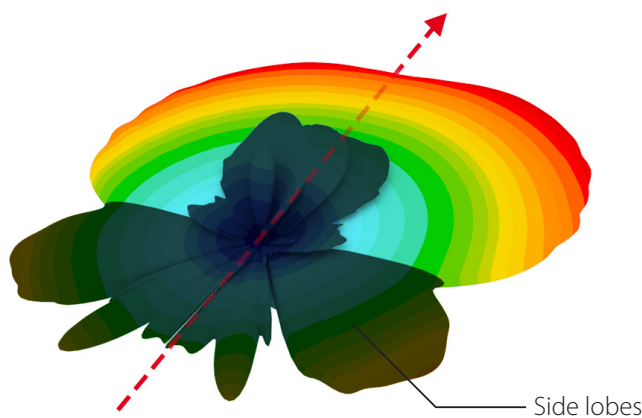
Our approach to the problem of RF pollution is logical and simple, yet truly unique. Instead of dealing with excessive amounts of noise by using complex and expensive methods, such as active filtering or GPS synchronization, we focus on the fundamentals of correct signal propagation.

We try to remove the source of these problems, not add products that mask or filter its consequences, as our competitors try to do.

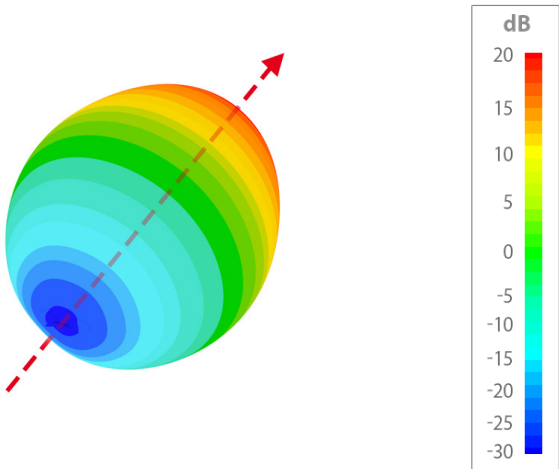
RF elements approach is rather about cleaning the air, not about a better filtering gas mask.

Our revolutionary antennas are based on Horn antenna technology, which we re-invented for today's complex challenges and has become the market leader in performance, cost, and spectrum efficiency. Our noise rejection features are unique and define a new class of wireless performance in a highly competitive market.

Competitor's Sector Antenna - radiation pattern

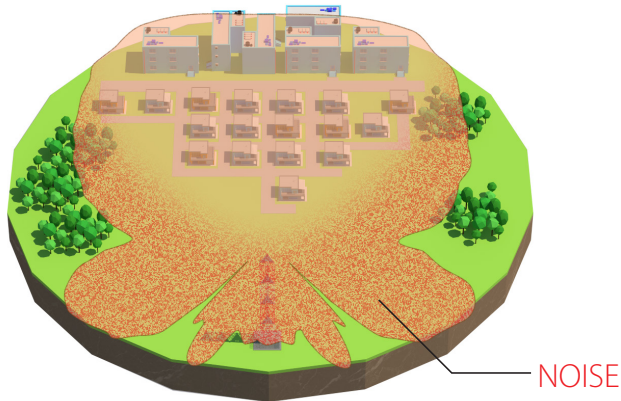


Symmetrical Horn TP Antenna - radiation pattern



RF elements Symmetrical Horn Antennas have no side lobes, they focus energy into one main beam. The problem of noise is directly related to antenna side lobes - an unavoidable feature in most competitive products. Symmetrical Horn TP Antennas behave differently, receiving no signal outside of their main beam.

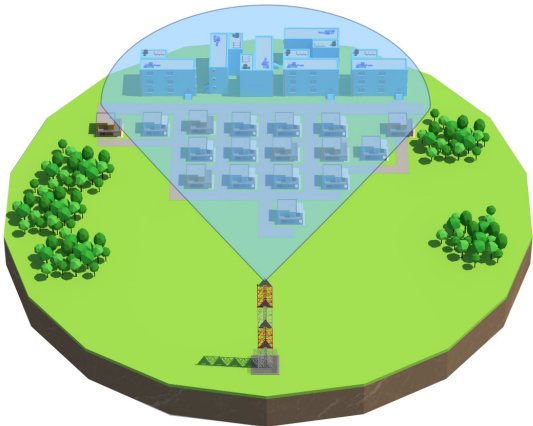
Competitor's Sector Antenna



AP THROUGHPUT:



RF elements Symmetrical Horn Antenna

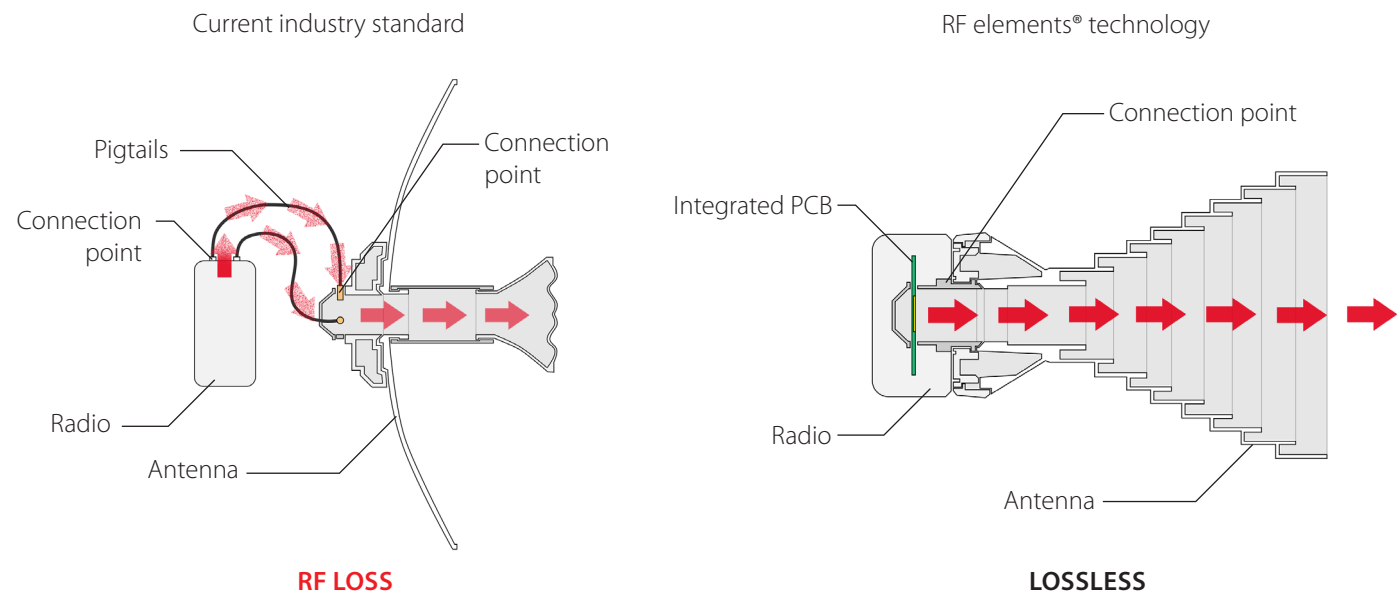


AP THROUGHPUT:



Zero Loss

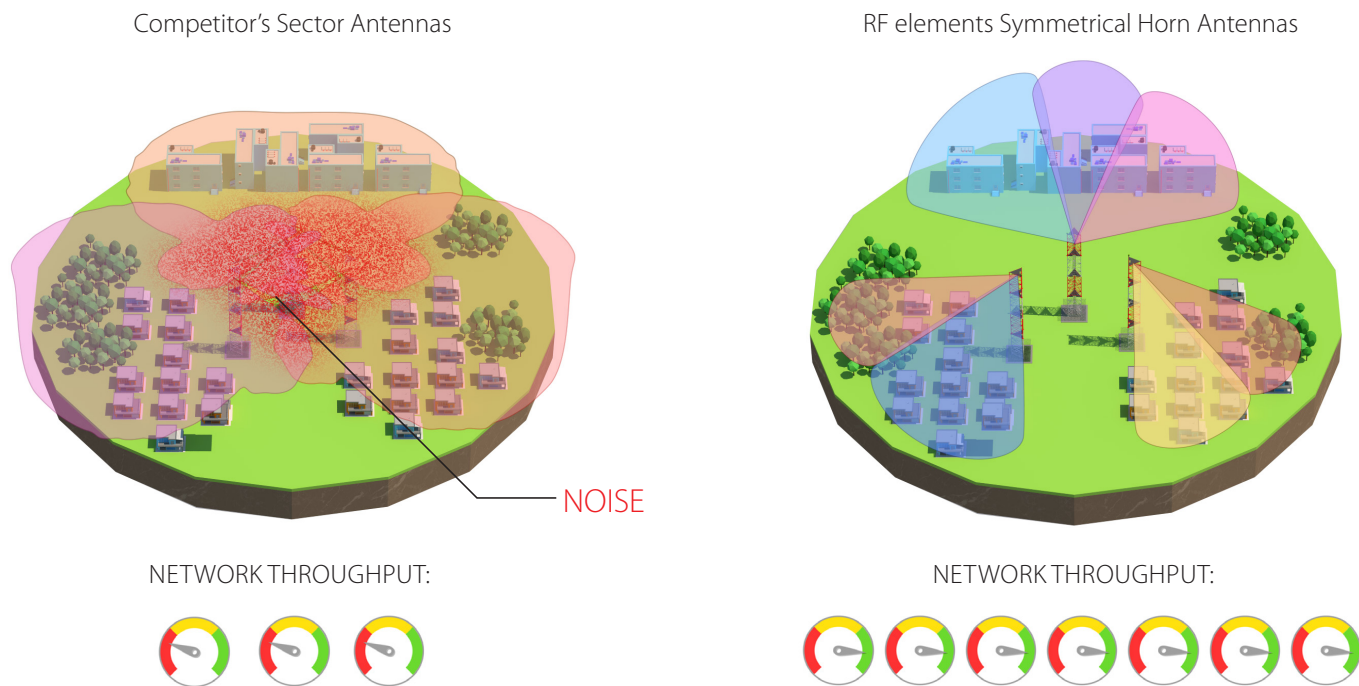
To achieve superior wireless performance, there are two key issues: Noise rejection and RF Loss. The main reason for RF signal loss is transmission of the RF signal between the radio and the antenna. Typically signals travel via coaxial cables and connectors, where signal is simply lost due to the laws of physics. Our proprietary TwistPort™ waveguide connector has no cables and no coaxial components. It uses a waveguide to transport the RF signal between the radio and the antenna. In comparison to the current market standard, such as RP-SMA coaxial connectors, TwistPort™ is virtually lossless. It is also very durable and extremely easy to use. Connecting radios is brilliantly simple - "twist and lock" - all done with one hand!



Massive Scalability

With current wireless equipment, increasing network granularity is simply not possible. Existing wireless equipment is hardly capable of delivering the performance needed TODAY, mainly due to low RF noise rejection and high loss.

By solving the two biggest problems, RF Noise and RF Loss, we unlock a whole new dimension of wireless networking. WISPs now can meet their increasing customer demands for connectivity by deploying more sectors with higher density. They really can increase the granularity of their networks, and they can achieve it at no premium - something they have been dreaming about forever.



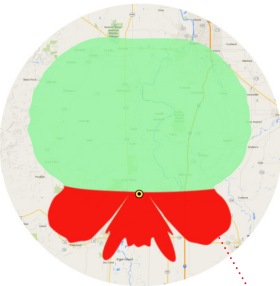
SYMMETRICAL HORN TP ANTENNAS

Symmetrical Horn TP Antennas are scalar horn antennas with a symmetrical beam radiation pattern and game-changing TwistPort™ (TP) connector. Deployed in field since 2014, they solve major weak points of mainstream sector antenna technologies and provide excellent noise rejection, network scalability and throughput increase.

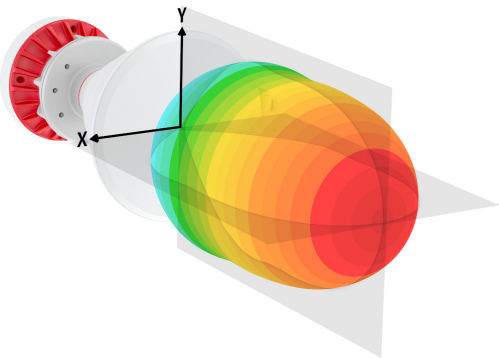
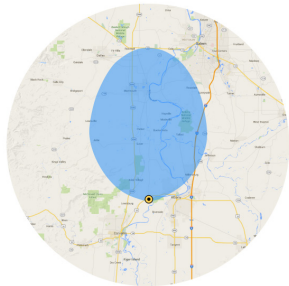
Approved by tens of thousands installations all around the globe, RF elements Symmetrical Horn TP Antennas are the new standard for fast and sustainable wireless.



Competitor's Sector Antenna



Symmetrical Horn TP Antenna



Symmetrical Beam Pattern

Symmetrical Horn TP Antennas have a unique beam shape and characteristics. The beam section is circular: azimuth and elevation radiation angles are identical so they can cover nearby areas much easier. The beam pattern does not vary with frequency and the antenna gain is balanced over a wide frequency range.

Excellent Noise Rejection

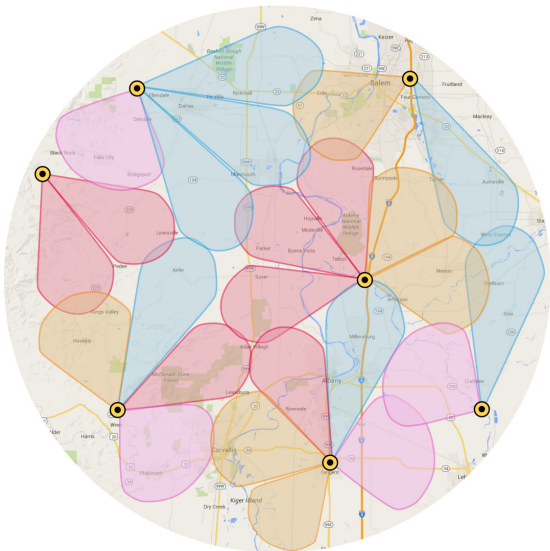
Symmetrical Horn TP Antennas have no side lobes, they focus energy into one main beam. The problem of noise is directly related to antenna side lobes - an unavoidable feature in most competitive products. Symmetrical Horn TP Antennas behave differently, receiving no signal outside of their main beam.

FEATURES



Zero Loss

Symmetrical Horn TP Antennas feature our industry-changing TwistPort™ connector, a patent-pending quick-locking waveguide port. TwistPort™ is virtually lossless: there are no coaxial RF connectors or RF cables that cause significant signal loss. Connecting radios can be done with one hand - “twist and lock”.



Breakthrough Scalability

Symmetrical Horn TP Antennas offer breakthrough scalability options for wireless systems. Excellent noise rejection and great co-location characteristics allow for a higher density of sectors than a traditional sector technology. Symmetrical Horn TP Antennas come with precise radiation angles, ranging from 30 to 90 degrees, with 10 degree steps.

Models



30° Sector
Gain: 18.4 dBi
Product ID: HG3-TP-S30
MSRP: 130.00 USD



40° Sector
Gain: 16.2 dBi
Product ID: HG3-TP-S40
MSRP: 125.00 USD



50° Sector
Gain: 14.3 dBi
Product ID: HG3-TP-S50
MSRP: 125.00 USD



60° Sector
Gain: 13.2 dBi
Product ID: HG3-TP-S60
MSRP: 125.00 USD



70° Sector
Gain: 11.5 dBi
Product ID: HG3-TP-S70
MSRP: 125.00 USD



80° Sector
Gain: 10.4 dBi
Product ID: HG3-TP-S80
MSRP: 125.00 USD



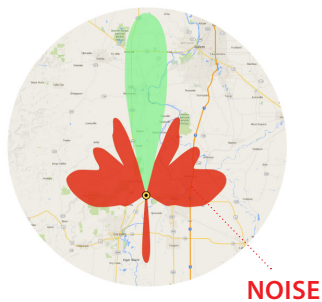
90° Sector
Gain: 9.6 dBi
Product ID: HG3-TP-S90
MSRP: 125.00 USD

ULTRAHORN™ TP ANTENNAS

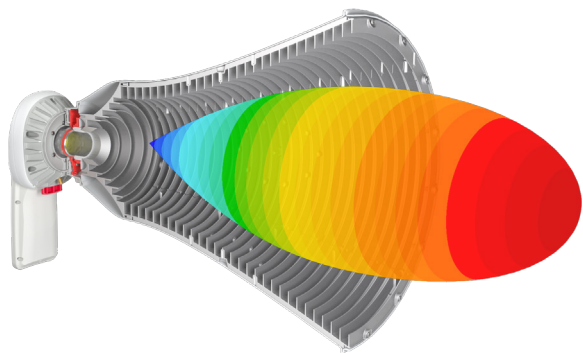
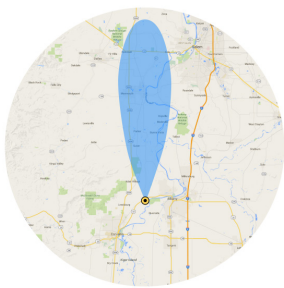
UltraHorn™ TP Antennas are high gain, highly directional scalar horn antennas. They offer all the benefits of scalar horns: ultra noise rejection, lossless connection of a radio and a symmetrical beam with no side lobes. These unique radiation properties make them excellent antennas for long links in environments with a high level of noise.



Competitor's PtP Antenna



UltraHorn™ TP



Ultimate Noise Rejection

UltraHorn™ TP Antennas do not have side lobes which allows them to reject noise. Side radiation is directly related to noise: radios transmit and also receive interference from unwanted directions. Side lobes from most mainstream antennas are huge, sometimes almost half the size of the main lobe and thus have a huge impact on overall performance. UltraHorn™ TP Antennas receive significantly less noise which allows them to achieve amazing performance in noisy environments.

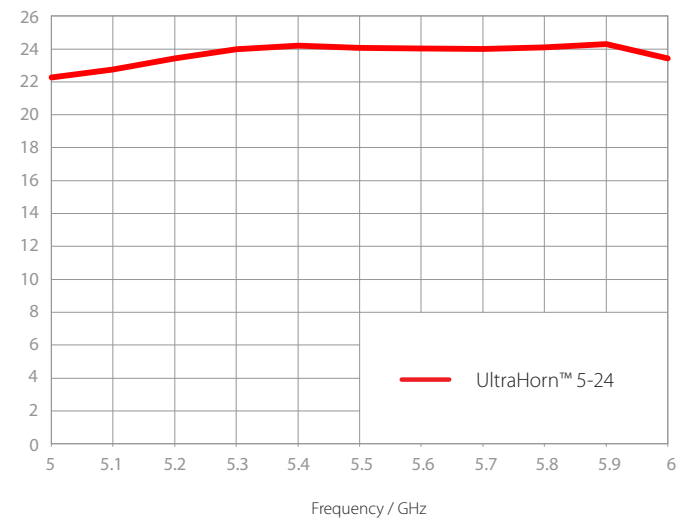
Unique beam without side lobes

UltraHorn™ TP Antennas are truly directional antennas: signal is focused only to the main beam without any side lobes. Precise radiation patterns of UltraHorn™ TP Antennas allow you to create long links in high noise environment with unprecedented performance. The optimal beam width makes aiming very simple compared to competitive antennas.



Zero Loss

UltraHorn™ TP Antennas feature our industry changing TwistPort™ connector, a patent-pending quick-locking waveguide port. There are no coaxial RF connectors or RF cables, which makes TwistPort™ a virtually lossless connector. Connection of the radio is brilliantly simple - “twist and lock” - all done with one hand!



High Gain

UltraHorn™ TP Antennas come with a surprisingly high gain: 24 dBi for UH-TP 5-24. In combination with narrow beam widths and no side lobes, UltraHorn™ TP Antennas bring amazing performance even when compared to higher gain competitive products.



No Accessories Needed

UltraHorn™ TP Antennas come as a complete antenna solution - there is no need to spend more money for radomes or shrouds. No extra costs for additional shielding that burdens the tower and does not work properly. UltraHorn™ TP Antennas have everything. Just buy an appropriate TwistPort™ Adaptor to connect your radio and deploy. That’s it!



Innovative Mounting System

UltraHorn™ TP Antennas feature our newest innovative mounting system that makes antenna installation an easy task. The mount is completely separated from the antenna so you first install just the bracket on the pole and then simply slide the antenna on the bracket. Adjustment is quick and easy as well.

Models

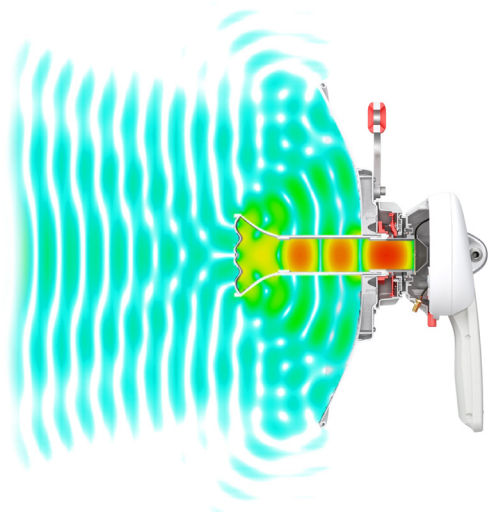
UltraHorn™ TP 5-24	
Gain	24 dBi
Azimuth Beam Width -3 dB	H 11° / V 11°
Front-to-back Ratio	40 dB
Product ID	UH-TP-5-24
MSRP	389.00 USD

ULTRADISH™ TP ANTENNAS

UltraDish™ TP Antennas are high-gain directional parabolic antennas with a lossless TwistPort™ connector. Antennas are highly directional with suppressed side lobes for ultimate performance.



	UltraDish™ TP 400	UltraDish™ TP 550
Gain	24.5 dBi	27.5 dBi
Front-to-Back Ratio	35 dB	37 dB
Product ID	ULD-TP-400-4PACK	ULD-TP-550-4PACK
MSRP (4-PACK)	399.00 USD	519.00 USD



Suppressed Side lobes

UltraDish™ TP Antennas have suppressed side lobe radiation that reduces interference and enables installation in areas with high noise levels. The gain of UltraDish™ TP Antennas is achieved by focusing the signal delivered via the TwistPort™ connector.



Zero Loss

TwistPort™ connectors are virtually lossless: there are no coaxial RF connectors or RF cables that cause significant signal loss. In comparison to widely used coaxial cables and connectors, the loss on TwistPort™ is almost unmeasurable.



Easy Installation

UltraDish™ TP Antennas come with a handle for easy manipulation. Climbing a tower with the UltraDish is easy due to its compact size and carbine hole. Installation of the antenna is very simple thanks to our innovative mount and the radio can be installed with one hand in a second just - “twist and lock”.



Innovative Mounting System

UltraDish™ TP features a new innovative mounting system. The mount is separated from the antenna, and therefore the antenna installation is simple. First install just the bracket on the pole and then simply slide the UltraDish™ TP antenna on the bracket. Adjustment is easy and quick.

TWISTPORT™ ADAPTORS

TwistPort™ Adaptors make the most popular connectorized radios compatible with any TwistPort™ antenna. TwistPort™ Adaptors allow easy integration with Ubiquiti Networks™ radios, MikroTik™ RouterBOARDS™, and Cambium Networks™ and Mimosa radios.

The installation of the radio is effortless: simply slide the radio into the adaptor until you hear “click”. To unlock, press the button and slide the radio out. For improved co-location performance TwistPort™ Adaptors come with integrated shielding.

Models



TwistPort™ Adaptor for Rocket Prism 5AC and airFiber® 5X

Product ID: TPA-PAF

Compatible radios: UBNT™ Rocket Prism 5AC, Rocket Prism 5AC Gen2, airFiber® 5X, airFiber® 5X-HD

MSRP: 54.90 USD

Smooth migration between Rocket® Prism 5AC and airFiber® 5XHD

The migration path from Rocket Prism 5AC to airFiber 5X platform is smooth and effective, as no additional investment on TP-A is required. TPA-PAF comes with a mount adaptor that allows it to be used with either Rocket Prism 5AC or airFiber® 5X radios.

GPS Antenna Integration

TP-A PAF contains a well protected space for the GPS antenna that comes with UBNT® radios. After integration, the GPS antenna and the antenna cable are covered and well protected. No more issues with antenna attachment or with troubleshooting damaged GPS antennas.



TwistPort™ Adaptor for RouterBoard

Product ID: TPA-RBC

Compatible radios: MikroTik™ RouterBoard™ M11, 9XX, 7XX, 4XX series

MSRP: 59.90 USD

Made For RouterBOARD™ RBM11G

TwistPort™ Adaptor for RouterBoard™ is compatible with MikroTik™ RouterBOARD™ M11 Series. The transition to TwistPort™ waveguide connector is terminated with two MMCX pigtails.

Aluminium Enclosure

TPA-RBC is made of cast aluminium and provides excellent protection that is required in outdoor environment.

More Flexibility

TPA-RBC offers space for additional external connectors of choice. Aluminium wall allows for custom drilling or milling to fulfill various requirements.



TwistPort™ Adaptor for IsoStation™
Product ID: TP-ADAP-IS
Compatible radios: UBNT™ PrismStation™ AC, IsoStation™ 5AC, IsoStation™ M5
MSRP: 19.90 USD



TwistPort™ Shielded Adaptor V2 for Rocket M5
Product ID: TP-ADAPTOR-RM5-S-V2
Compatible radios: UBNT™ Rocket™ M5
MSRP: 44.90 USD



TwistPort™ Adaptor V2 for ePMP 1000 AP or CSM
Product ID: TP-ADAPTOR-EPMP-V2
Compatible radios: Cambium Networks™ ePMP™ 1000
MSRP: 29.90 USD



TwistPort™ Adaptor for ePMP 2000 AP
Product ID: TP-ADAP-e2K
Compatible radios: Cambium Networks™ ePMP™ 2000
MSRP: 44.90 USD



TwistPort™ Adaptor for Mimosa C5c
Product ID: TP-ADAP-C5c
Compatible radios: Mimosa C5c
MSRP: 29.90 USD

SYMMETRICAL HORN CARRIER CLASS

Symmetrical Horn Carrier Class are scalar horn antennas with a symmetrical beam radiation pattern without side lobes. They offer unique features: excellent noise rejection and supreme scalability options for higher sector density. These make them perfect sector antennas.



N-type Connectors

Symmetrical Horn Carrier Class Antennas feature N-type female connectors, allowing connection with a wide range of radios, such as Mimosa™, Cambium Networks™ PMP450, LigoWave™, UBNT™ Rocket M5 Titanium, MikroTik™ connectorized radios (NetBox™, BaseBox™ and NetMetal™) and many others.



Models



30° Sector
Gain: 18.5 dBi
Product ID: SH-CC-5-30
MSRP: 220.00 USD



60° Sector
Gain: 13.2 dBi
Product ID: SH-CC-5-60
MSRP: 220.00 USD

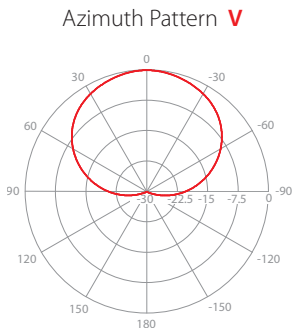
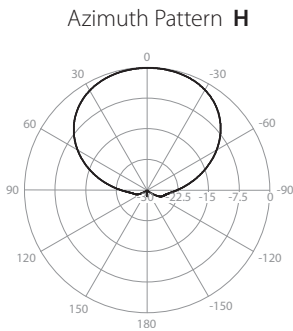
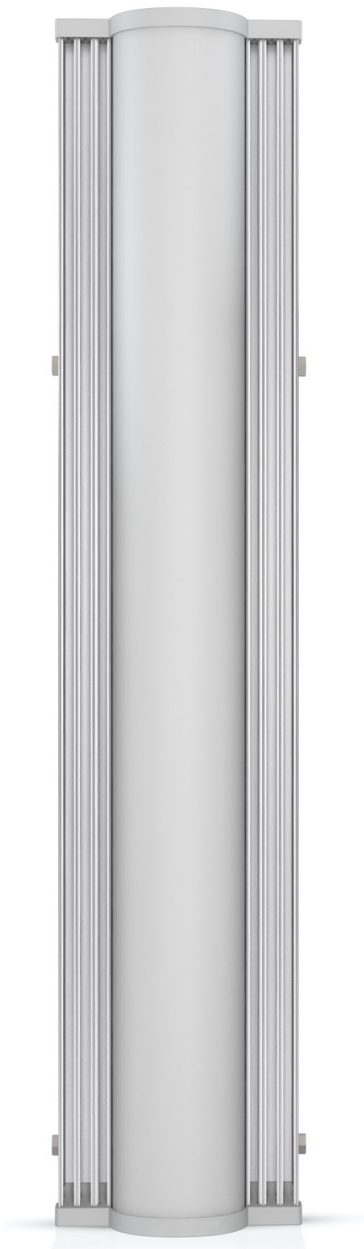


90° Sector
Gain: 10 dBi
Product ID: SH-CC-5-90
MSRP: 220.00 USD

Note: We offer also 40°, 50°, 70° and 80° Symmetrical Horns Carrier Class but they are available only upon custom order.

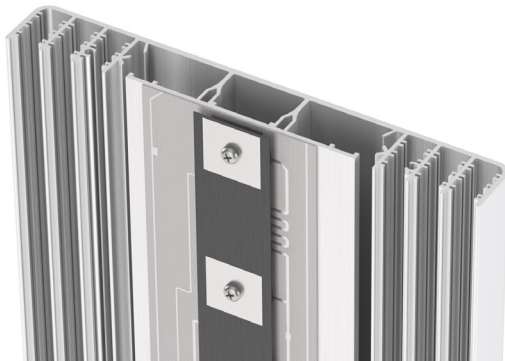
SECTOR CARRIER CLASS

Sector Carrier Class Antennas are optimized for the best MiMo performance and cluster deployment. Thanks to our patent-pending BackShield™ technology, co-location is an easy task.



Balanced RF Performance

RF elements® Sector Carrier Class Antennas are optimized for balanced performance between horizontal and vertical antenna systems. The radiation patterns and gain in horizontal and vertical polarization are as similar as possible.



BackShield™ for Cluster Deployments

Frequency-selective reflectors that attenuate side lobes and backside radiation are integrated into the antenna structure. They are optimized for a particular frequency range where the antenna works.

Models

	2.4 GHz 14 dBi	5 GHz 16 dBi HHV	5 GHz 20 dBi
Gain	13.8 dBi	H1 16.7 dBi H2 16 dBi V 16.7 dBi	19.7 dBi
Azimuth Beam Width -6 dB	100°	102°	100°
Front-to-Back Ratio	24 dB	30.6 dB	29 dB
Product ID	SEC-CC-2-14	SEC-CC-5-16-HHV	SEC-CC-5-20
MSRP	130.00 USD	160.00 USD	140.00 USD

INTEGRATION PLATFORMS

RF elements integration platforms are designed for building customized solutions. This includes various CPE platforms, different enclosures and shieldings that are suitable for any situation. Our innovative approach focuses on major simplification of assembly and installation without sacrificing any performance. Integration platforms are durable and come in a nice design.

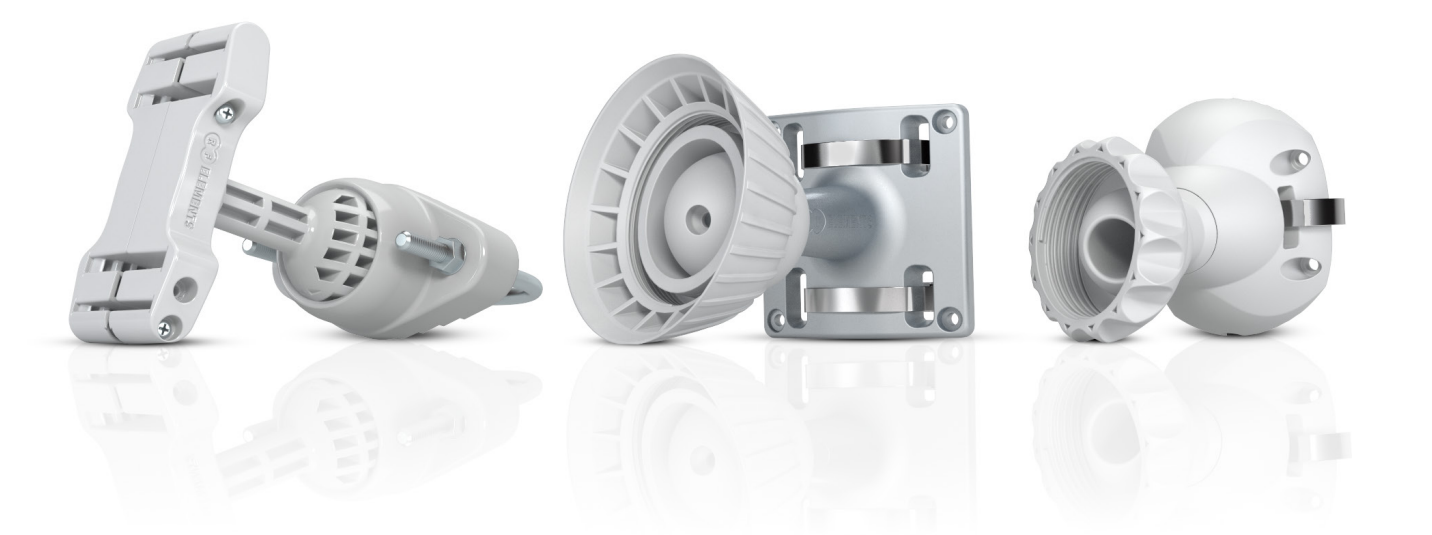


Models

	Frequency	Gain	Product ID	MSRP
StationBox® XL 2.4 GHz	2400-2485 MHz	14 dBi	SBX-XL-2-14	35.90 USD
StationBox® XL 5 GHz	5450-5850 MHz	18 dBi	SBX-XL-5-19	35.90 USD
StationBox® S CARRIER CLASS	n/a	n/a	SBX-S-CC-2SMA	35.90 USD
RockShield™	n/a	n/a	ROCKSHIELD	19.90 USD
StationBox® InSpot Indoor Enclosure	n/a	n/a	SBX_INSPOT	13.90 USD

BRACKETS

NanoBrackets® are our ultimate mounting solution that secures proper functionality of wireless systems and saves a significant amount of time at deployment. NanoBrackets® feature a ball hinge mechanism. A ball hinge allows precise adjustment not only in elevation and azimuth, but also in the third axis - rotation.



Four generations of NanoBracket®

The first generation focuses on a smooth 3-axis adjustment. The second generation of NanoBracket® improves mechanical and environmental resistance. The third focuses on easy installation and speed of deployment. The fourth generation combines the best of all: improved installation, solid construction, and a 70° tilt.

Models

	Compatible Product	Product ID	MSRP
NanoBracket® for NSM	UBNT™ NanoStation M	NB-NSM	6.90 USD
NanoBracket® for locoM	UBNT™ NanoStation Loco M	NB-LOCO-M	6.90 USD
NanoBracket® for NBE-M5-16	UBNT™ NanoBeam M5-16	NB-M5-16	6.90 USD
NanoBracket® for ePMP™	Cambium Networks™ ePMP™ 1000	NB-EPMP	11.90 USD
NanoBracket® Light for RB SXT	MikroTik™ RB SXT	NB-SXT-LIGHT	6.90 USD
NanoBracket® SEXTANT	MikroTik™ RB SEXTANT	NB_SEXTANT	11.90 USD

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