

DATA SHEET

CNANTOMNIKIT

Omni-directional external antenna, 2-port
for Celona outdoor access point

Part Number CNANTOMNIKIT

Includes two surge protectors and two LMR400 120" / 3m antenna cables. Two required per Celona outdoor AP.

Electrical

Frequency range	3300-3800 MHz
Polarization	Vertical and Horizontal
Gain	13 dBi
Elevation 3dB beamwidth	7 °
Electrical Downtilt	1 °
VSWR	< 2:1
Return loss	> 10 dB
Cross-pol ratio	> 20 dB
V-H port isolation	> 30 dB
Input power	50 W max per port
Impedance	50 Ω
Connector Type	Type N Female x 2

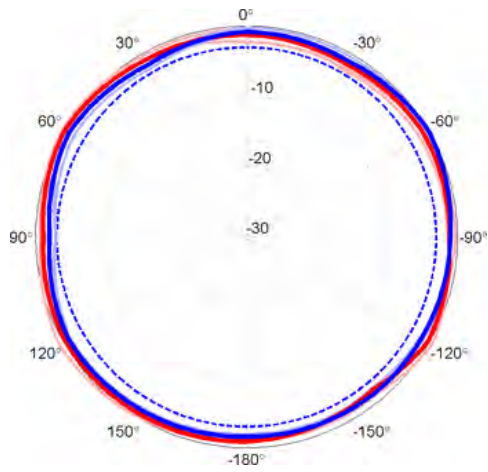
Mechanical

Dimensions	33" x 6" x 5" 83.8 x 15.2 x 12.7cm
Weight	5 lb / 2.27 kg
Mounting method	Mast
Mounting pole dia	1.6" - 2.4" 4.1cm - 6.1cm
Radome material	UV resistant PVC

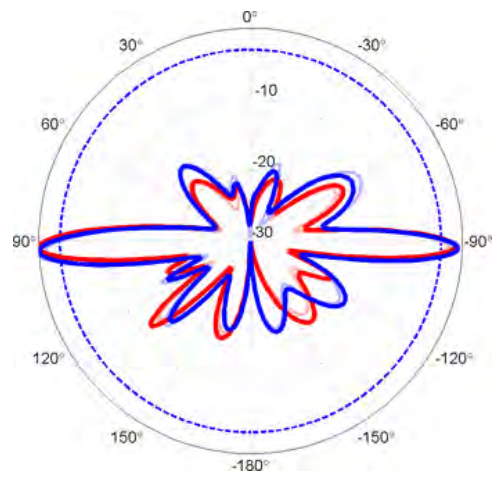
Environmental

Temperature range	-40° to +65° C / +150° F
Wind speed	210 km/h / 130 mph
UV protection	UV resistant PVC
Ingress protection	IP55 rain resistant
Lightning protection	DC Ground

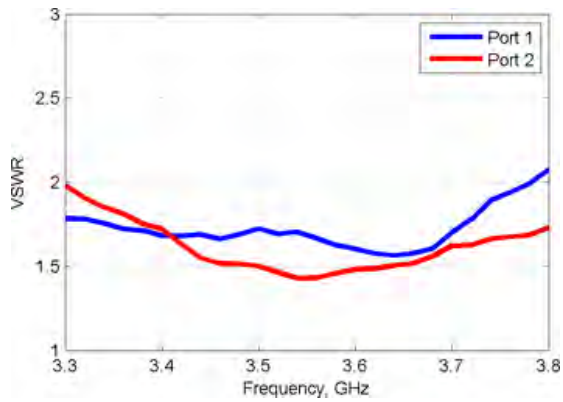
Azimuth patterns



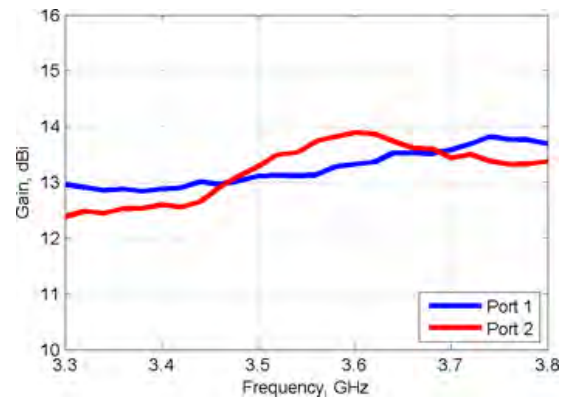
Elevation patterns



VSWR



Gain



DATA SHEET

CNANT33DKIT

33-degree sectorized, 2-port external antenna
for Celona outdoor access point

3.5 GHz to 4.2 GHz, 33 Degree Sector Antenna, 18.8 dBi, 2-Port, $\pm 45^\circ$ Slant

- 4° fixed electrical downtilt
- ProLine sector with stable and high gain
- Interference mitigation with azimuth and elevation side-lobe suppression
- Includes two surge protectors and two LMR400 120" / 3m antenna cables.
- Two required per Celona outdoor AP.

Electrical Specification

Frequency Band	MHz	3500–3800	3800–4200
Gain	dBi	18.5 $\pm$ 0.2	18.8 $\pm$ 0.3
Polarization		Slant ($\pm 45^\circ$)	Slant ($\pm 45^\circ$)
Horizontal HPBW	Degree	35 $\pm$ 1	33 $\pm$ 1
Horizontal Squint	Degree	$\pm$ 0.5	$\pm$ 0.5
Vertical HPBW	Degree	8.5 $\pm$ 0.5	7.8 $\pm$ 0.4
Electrical Downtilt	Degree	4	4
Front-to-Back Ratio @ $180^\circ \pm 30^\circ$	dB	35	33
Upper Side Lobe Suppression ($+20^\circ$)	dB	15	15
Cross-polarization Ratio over HPBW	dB	15	13
VSWR		1.3 typ 1.5 max	1.3 typ 1.5 max
Return Loss	dB	17 typ 14 max	17 typ 14 max
Port-to-Port Isolation	dB	30	25
Max. Input Power per Port	W	50	50
Impedance	Ohms	50	50

Bracket Specification

Material Type	Powder Coated High-Strength Aluminium
Mechanical Tilt (Degree)	-1 to +18 (Slot 1) -7 to +11 (Slot 2)
Mounting Type	Pipe Mount
Mounting pole diameter	1.9cm – 11.4cm / 0.75" – 4.5"
Antenna-to-Pipe Distance	12.1cm / 4.8"
Bracket-to-Bracket Distance	47cm / 18.5"

Sector Dimensions

Length	58.5cm / 23.0"
Width	17.4cm / 6.9"
Height	7.9cm / 3.1"
Net Weight, with brackets	5.7 kg / 12.5 lb

Shipping Dimensions

Length	102cm / 40"
Width	36cm / 14"
Height	36cm / 14"
Net Weight	7.3 kg / 16 lb

HPBW: Average and variation of the antenna's 3dB beamwidth (half power beamwidth) in its horizontal (Azimuth) or vertical (Elevation) pattern.

Horizontal Squint: Angle in the antenna's azimuth pattern in which the maximum gain occurs. Reported is the maximum variation in the frequency band.

Electrical Downtilt: Angle in the antenna's elevation pattern in which the maximum gain occurs.

Gain: Antenna's average gain and variation in each frequency band.

Front to Back Ratio @ 180°±30°: Difference between the antenna's maximum gain and the maximum gain in the antenna's back lobe over ±30° angles.

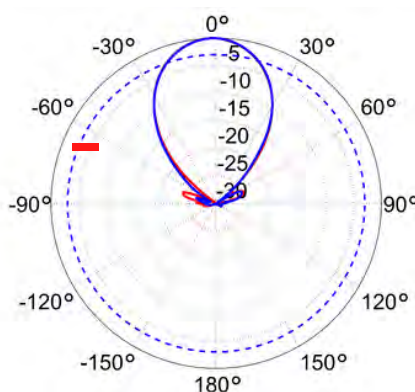
Upper Side Lobe Suppression: The maximum value for the antenna's elevation upper side lobes from the main beam to +20°.

Cross-polarization Ratio over HPBW (dB): Maximum difference between the co-polarization and cross-polarization gain across the sector's HPBW.

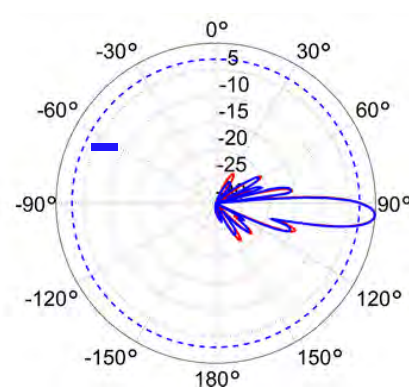
Mechanical Specifications

RF Connector Type	N-Type Female
RF Connector Quantity	2
RF Connector Position	Bottom of radome
Electrical Grounding	RF connector grounded to reflector and bracket
Radome Material	UV resistant PVC
Reflector Material	Fully-Enclosed Aluminium
Ingress Protection	IP55 rain and dust resistant
Wind Load, frontal	135N @ 160km/h 30lbf @ 100mph
Max. Wind Speed	160km/h 100mph
Temperature Range	-40° to +60° C -40° to +140° F

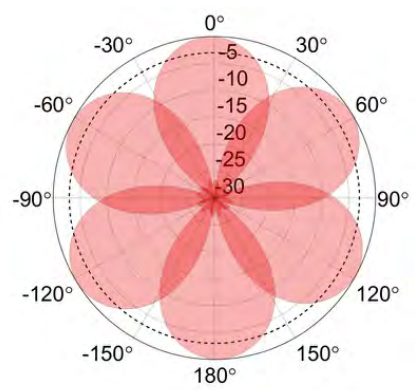
45 Slant - Azimuth Pattern



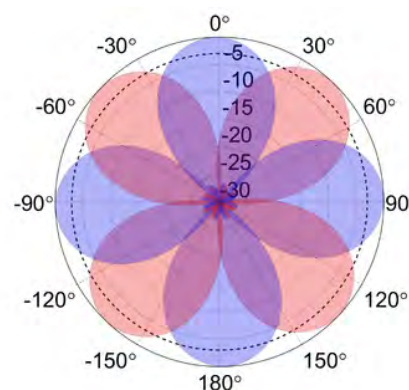
45 Slant - Elevation Pattern



Frequency - Reuse one



ABAB Channel Reuse



DATA SHEET

CNANT90DKIT

90-degree sectorized, 2-port external antenna for
Celona outdoor access point

2-port sector antenna, 3300–3800 MHz, 90° HPBW

- High gain and slant dual polarization
- Simultaneously maximize coverage and minimize interference
- Ideal for 3-sector frequency-reuse one with LTE equipment
- Includes two surge protectors and two LMR400 120" / 3m antenna cables.
- Two required per Celona outdoor AP.

Electrical Specification

Frequency Band	MHz	3300–3550	3550–3800
Gain	dBi	16.7±0.25	16.5±0.25
Polarization		Slant (±45°)	Slant (±45°)
Horizontal HPBW	Degree	85±2	90±2
Horizontal Skew	Degree	±2	±3
Vertical HPBW	Degree	7±0.25	6.5±0.25
Electrical Downtilt	Degree	2	3.5
Front-to-Back Ratio @ 180°	dB	31	35
Front-to-Back Ratio @ 180°±30°	dB	28	28
Cross-polarization Ratio at Boresight	dB	25	23
Cross-polarization Ratio over HPBW	dB	20	17
VSWR		1.5 typ 1.7 max	1.3 typ 1.5 max
Return Loss	dB	14 typ 12 max	18 typ 14 max
Port-to-Port Isolation	dB	25	30
Max. Input Power per Port	W	50	50
Impedance	Ohms	50	50

Bracket Specification

Material Type	Hot Dipped Galvanized Steel
Mechanical Tilt (Degree)	-4 – 16
Mounting Type	Pipe Mount
Mounting pole diameter	2.5cm – 8.9cm / 1.25" – 3.5"
Antenna-to-Pipe Distance	13.1cm / 5"
Bracket-to-Bracket Distance	49cm / 19"

Mechanical Specifications

RF Connector Type	Type N Female
RF Connector Quantity	2
RF Connector Position	Bottom of radome
Electrical Grounding	RF connector grounded to reflector and mounting bracket
Radome Material	UV resistant PVC
Ingress Protection	IP55 rain and dust resistant
Wind Load, frontal	240N @ 160km/h 54 lbf @ 100mph
Max. Wind Speed	160km/h 100mph
Temperature Range	-40° to +60° C -40° to +140° F

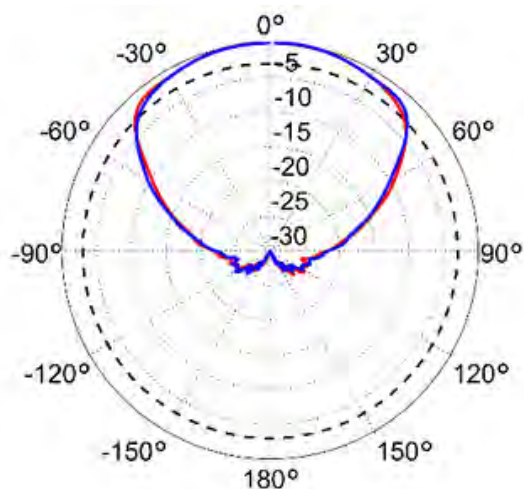
Sector Dimensions

Length	71cm / 27"
Width	27.9cm / 11"
Height	8.9cm / 3.5"
Net Weight, with brackets	3.2 kg / 10 lb

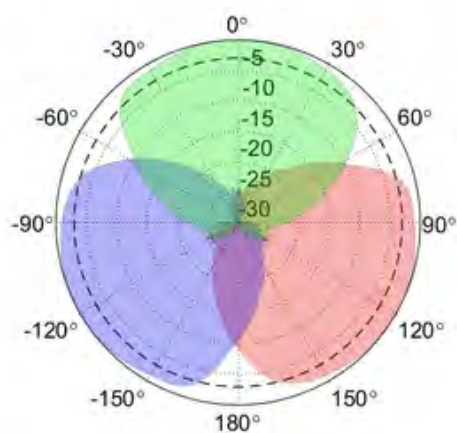
Shipping Dimensions

Length	102cm / 40"
Width	36cm / 14"
Height	36cm / 14"
Net Weight	8.2 kg / 18lb

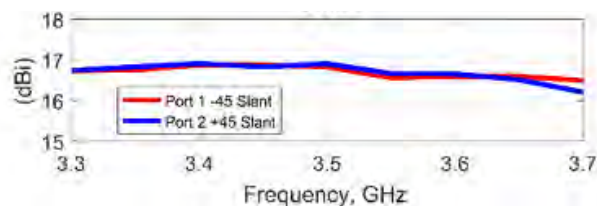
Port 1 - 45 Slant



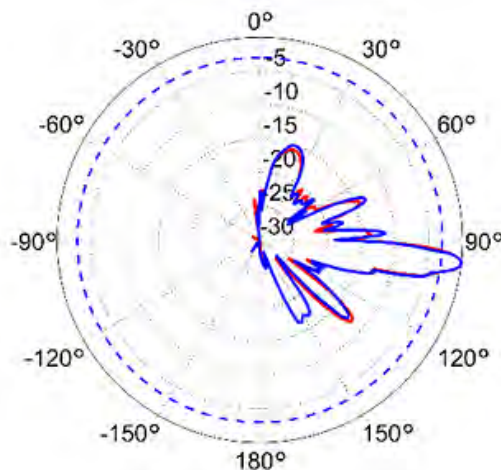
Frequency-Reuse One



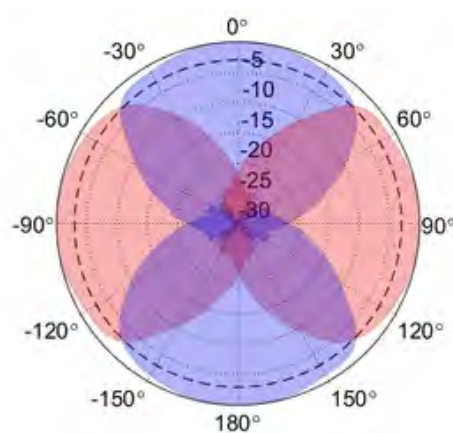
Gain



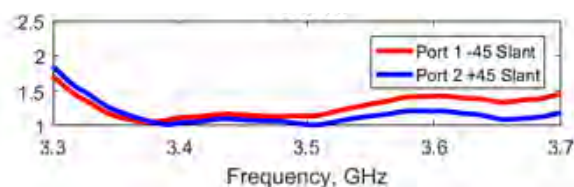
Port 2 + 45 Slant



ABAB Channel Reuse



VSWR



HPBW: Average and variation of the antenna's 3dB beamwidth (half power beamwidth) in its horizontal (Azimuth) or vertical (Elevation) pattern.

Azimuth Skew: Angle in the antenna's azimuth pattern in which the maximum gain occurs. Reported is the maximum variation in the frequency band.

Electrical Downtilt: Angle in the antenna's elevation pattern in which the maximum gain occurs.

Gain: Antenna's average gain and variation in each frequency band.

Front to Back Ratio @ 180°: Difference between the antenna's maximum gain and the gain directly behind the antenna ($\theta=180^\circ$).

Front to Back Ratio @ 180°±30°: Difference between the antenna's maximum gain and the maximum gain in the antenna's back lobe over $\pm 30^\circ$ angles.

Cross polarization at boresight: Difference between the co-polarization and cross-polarization gain at 0° (boresight).

Cross-polarization Ratio over HPBW (dB): Maximum difference between the co-polarization and cross-polarization gain across the sector's HPBW.

DATA SHEET

CNANT120DKIT

120-degree sectorized, 2-port external antenna for Celona outdoor access point

2-port sector antenna, 3300–3800 MHz, 120° HPBW

- High gain and slant dual polarization
- Simultaneously maximize coverage and minimize interference
- Ideal for 2-sector frequency-reuse one with LTE equipment
- Includes two surge protectors and two LMR400 120" / 3m antenna cables.
- Two required per Celona outdoor AP.

Electrical Specification

Frequency Band	MHz	3300–3550	3550–3800
Gain	dBi	15±0.25	16.5±0.25
Polarization		Slant (±45°)	Slant (±45°)
Horizontal HPBW	Degree	115±5	90±2
Horizontal Squint	Degree	±4	±3
Vertical HPBW	Degree	8±1	6.5±0.25
Electrical Downtilt	Degree	3.5	3.5
Front-to-Back Ratio @ 180°	dB	35	35
Front-to-Back Ratio @ 180°±30°	dB	28	28
Cross-polarization Ratio at Boresight	dB	25	23
Cross-polarization Ratio over HPBW	dB	15	17
VSWR		1.7 typ 2 max	1.3 typ 1.5 max
Return Loss	dB	12 typ 10 max	18 typ 14 max
Port-to-Port Isolation	dB	20	30
Max. Input Power per Port	W	50	50
Impedance	Ohms	50	50

Bracket Specification

Material Type	Hot Dipped Galvanized Steel
Mechanical Tilt (Degree)	-4 – 15
Mounting Type	Pipe Mount
Mounting pole diameter	2.5cm – 8.9cm / 1.25" – 3.5"
Antenna-to-Pipe Distance	12.7cm / 5"
Bracket-to-Bracket Distance	54.6cm / 21.5"

Mechanical Specifications

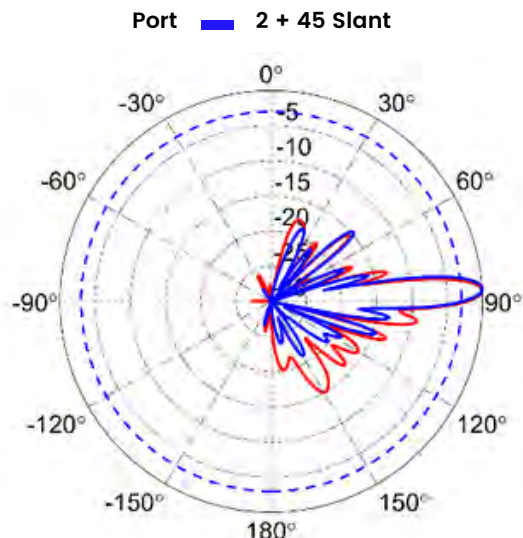
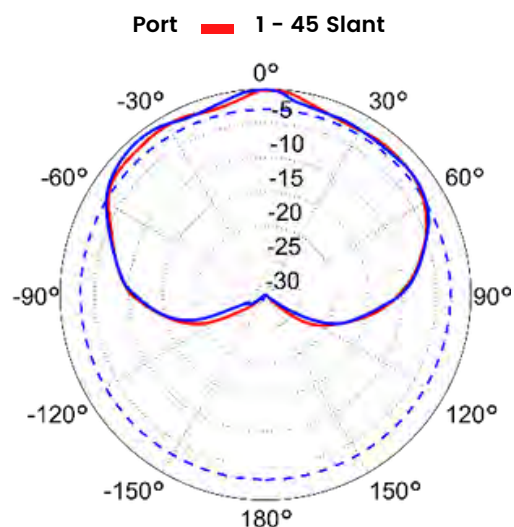
RF Connector Type	Type N Female
RF Connector Quantity	2
RF Connector Position	Bottom of radome
Electrical Grounding	RF connector grounded to reflector and mounting bracket
Radome Material	UV resistant PVC
Ingress Protection	IP55 rain and dust resistant
Wind Load, frontal	220N @ 160km/h 49lbf @ 100mph
Max. Wind Speed	160km/h 100mph
Temperature Range	-40° to +60° C -40° to +140° F

Sector Dimensions

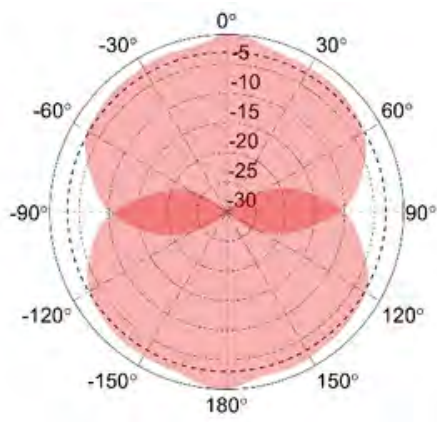
Length	73.6cm / 29"
Width	17.8cm / 7"
Height	8.9cm / 3.5"
Net Weight, with brackets	5 kg / 11 lb

Shipping Dimensions

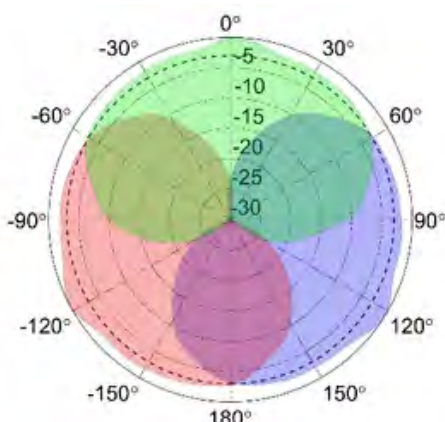
Length	102cm / 40"
Width	36cm / 14"
Height	36cm / 14"
Net Weight	9.5 kg / 21 lb



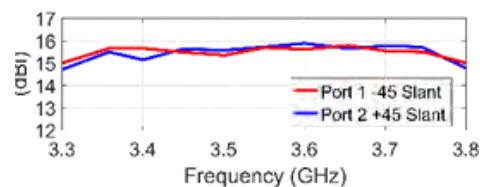
Frequency-Reuse One



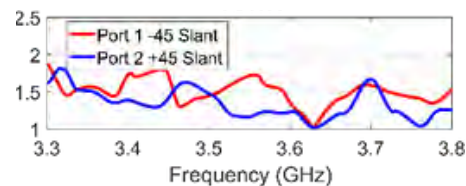
Three Sector Deployment



Gain



VSWR



HPBW: Average and variation of the antenna's 3dB beamwidth (half power beamwidth) in its horizontal (Azimuth) or vertical (Elevation) pattern.

Horizontal Squint: Angle in the antenna's azimuth pattern in which the maximum gain occurs. Reported is the maximum variation in the frequency band.

Electrical Down tilt: Angle in the antenna's elevation pattern in which the maximum gain occurs.

Gain: Antenna's average gain and variation in each frequency band.

Front to Back Ratio @ 180°: Difference between the antenna's maximum gain and the gain directly behind the antenna ($\theta=180^\circ$).

Front to Back Ratio @ 180°±30°: Difference between the antenna's maximum gain and the maximum gain in the antenna's back lobe over $\pm 30^\circ$ angles.

Cross polarization at boresight: Difference between the co-polarization and cross-polarization gain at 0° (boresight).

Cross-polarization Ratio over HPBW (dB): Maximum difference between the co-polarization and cross-polarization gain across the sector's HPBW.

DATA SHEET

CNANT65DKIT

65-degree sectorized, 2-port external antenna for
Celona outdoor access point

2-port sector antenna, 3300–3800 MHz, 65° HPBW

- High gain and slant dual polarization
- Simultaneously maximize coverage and minimize interference
- Ideal for 3-sector frequency-reuse one with LTE equipment
- Includes two surge protectors and two LMR400 120" / 3m antenna cables
- Two required per Celona outdoor AP

Electrical Specification

Frequency Band	MHz	3300–3550	3550–3800
Gain	dBi	17.3 ± 0.4	17.7 ± 0.4
Polarization		Slant (±45°)	Slant (±45°)
Horizontal HPBW	Degree	65 ± 2	62 ± 2
Horizontal Skew	Degree	± 2	± 2
Vertical HPBW	Degree	7 ± 0.5	6.5 ± 0.5
Electrical Downtilt	Degree	3.5	3
Front-to-Back Ratio @ 180°	dB	35	38
Front-to-Back Ratio @ 180°±30°	dB	30	35
Cross-polarization Ratio at Boresight	dB	18	20
Cross-polarization Ratio over HPBW	dB	13	14
VSWR	dB	1.5 typ 2 max	1.5 typ 1.7 max
Return Loss		14 typ 10 max	14 typ 12 max
Port-to-Port Isolation	dB	20	25
Max. Input Power per Port	W	50	50
Impedance	Ohms	50	50

Bracket Specification

Material Type	Hot Dipped Galvanized Steel
Mechanical Tilt (Degree)	-4 – 16
Mounting Type	Pipe Mount
Mounting pole diameter	2.5cm – 8.9cm / 1.25" – 3.5"
Antenna-to-Pipe Distance	13.1cm / 5"
Bracket-to-Bracket Distance	49cm / 19"

Mechanical Specifications

RF Connector Type	Type N Female
RF Connector Quantity	2
RF Connector Position	Bottom of radome
Electrical Grounding	RF connector grounded to reflector and mounting bracket
Radome Material	UV resistant PVC
Ingress Protection	IP55 rain and dust resistant
Wind Load, frontal	170N @ 160km/h 38 lbf @ 100mph
Max. Wind Speed	160km/h 100mph
Temperature Range	-40° to +60° C -40° to +140° F

Sector Dimensions

Length	73.6cm / 29"
Width	17cm / 7"
Height	8.9cm / 3.5"
Net Weight, with brackets	4.5 kg / 10lb

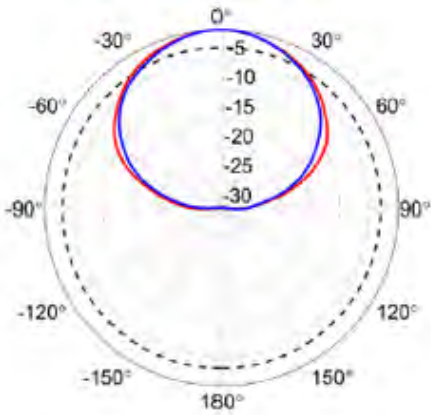
Shipping Dimensions

Length	102cm / 40"
Width	36cm / 14"
Height	36cm / 14"
Net Weight	8.2 kg / 16 lb

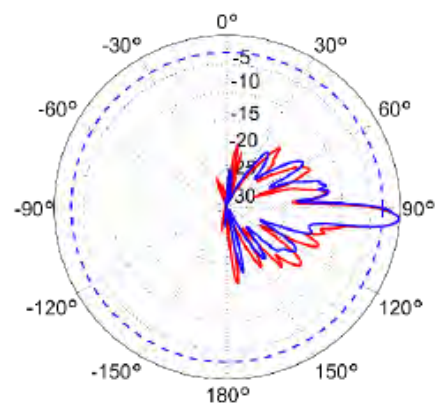
Port 1 - 45 Slant

Port 2 + 45 Slant

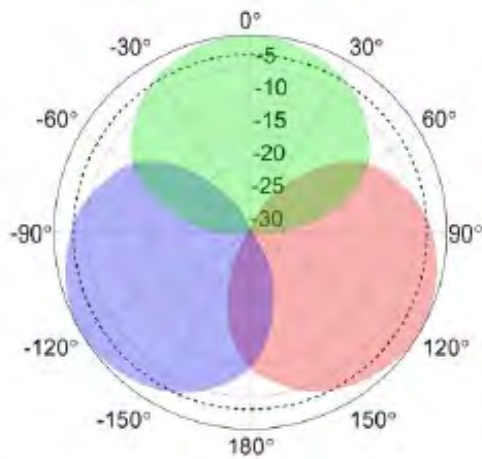
Azimuth Pattern



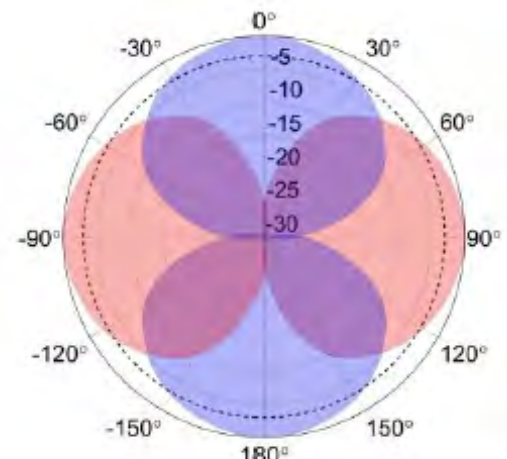
Elevation Pattern



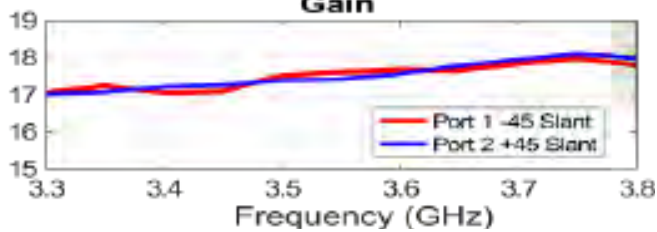
Frequency-Reuse One



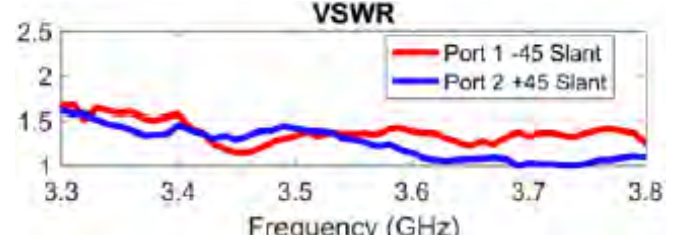
ABAB Channel Reuse



Gain



VSWR



HPBW: Average and variation of the antenna's 3dB beamwidth (half power beamwidth) in its horizontal (Azimuth) or vertical (Elevation) pattern.

Azimuth Skew: Angle in the antenna's azimuth pattern in which the maximum gain occurs. Reported is the maximum variation in the frequency band.

Electrical Downtilt: Angle in the antenna's elevation pattern in which the maximum gain occurs.

Gain: Antenna's average gain and variation in each frequency band.

Front to Back Ratio @ 180°: Difference between the antenna's maximum gain and the gain directly behind the antenna ($\theta=180^\circ$).

Front to Back Ratio @ 180°±30°: Difference between the antenna's maximum gain and the maximum gain in the antenna's back lobe over $\pm 30^\circ$ angles.

Cross polarization at boresight: Difference between the co-polarization and cross-polarization gain at 0° (boresight).

Cross-polarization Ratio over HPBW (dB): Maximum difference between the co-polarization and cross-polarization gain across the sector's HPBW.

DATA SHEET

CNANT90D4P

90-degree sectorized, 4-port external antenna for
Celona outdoor access point

4-port sector antenna, 3300–3800 MHz, 90° HPBW

- High gain and slant dual polarization
- Simultaneously maximize coverage and minimize interference
- Ideal for 4-sector frequency-reuse two with LTE equipment and CBRS deployments
- Includes four surge protectors and four LMR400 120" / 3m antenna cables
- One required per Celona outdoor AP

Electrical Specification

Frequency Band	MHz	3300–3550	3550–3800
Gain	dBi	16.5 ± 0.5	17 ± 0.3
Polarization		Slant (±45°)	Slant (±45°)
Horizontal HPBW	Degree	95 ± 5	90 ± 5
Horizontal Skew	Degree	±3	±3
Vertical HPBW	Degree	6.5 ± 0.3	6 ± 0.3
Electrical Downtilt	Degree	0	0
Front-to-Back Ratio @ 180°±30°	dB	30	30
Cross-polarization Ratio over HPBW	dB	15	14
VSWR		1.5 typ 2 max	1.5 typ 1.7 max
Return Loss	dB	14 typ 10 max	14 typ 12 max
Port-to-Port Isolation	dB	25	25
Max. Input Power per Port	W	50	50
Impedance	Ohms	50	50

Bracket Specification

Material Type	Power Coated Steel
Mechanical Tilt (Degree)	-2 – 8
Mounting Type	Pipe Mount
Mounting pole diameter	2.5cm – 8.9cm / 1.25" – 3.5"
Antenna-to-Pipe Distance	7.6cm / 3"
Bracket-to-Bracket Distance	52.4cm / 20.6"

Mechanical Specifications

RF Connector Type	Type N Female
RF Connector Quantity	4
RF Connector Position	Bottom of radome
Electrical Grounding	RF connector grounded to reflector and mounting bracket
Radome Material	UV resistant PVC
Ingress Protection	IP55 rain and dust resistant
Wind Load, frontal	240N @ 160km/h 54 lbf @ 100mph
Max. Wind Speed	160km/h 100mph
Temperature Range	-40° to +60° C -40° to +140° F

Sector Dimensions

Length	72cm / 28.3"
Width	27.9cm / 11"
Height	8.9cm / 3.5"
Net Weight, with brackets	10 kg / 22 lb

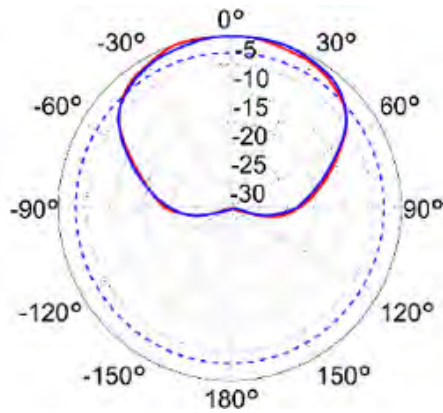
Shipping Dimensions

Length	102cm / 40"
Width	36cm / 14"
Height	36cm / 14"
Net Weight	13.6 kg / 30lb

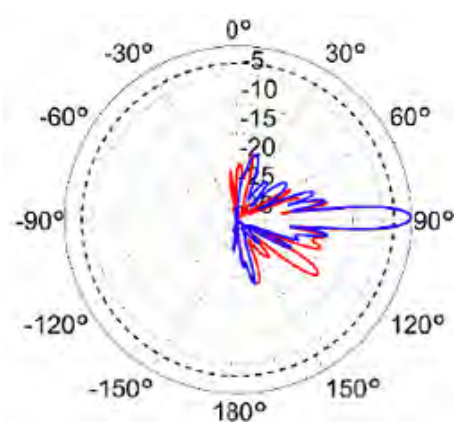
Port 1 - 45 Slant

Port 2 + 45 Slant

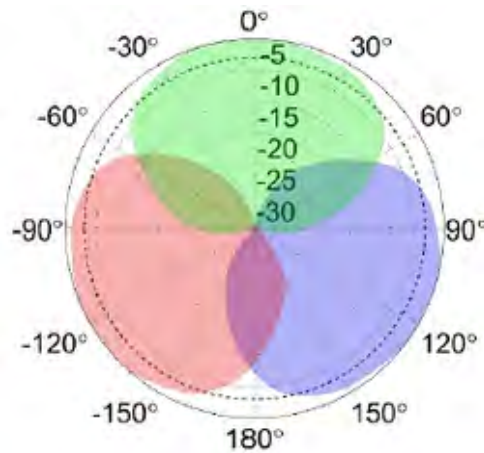
Azimuth Pattern



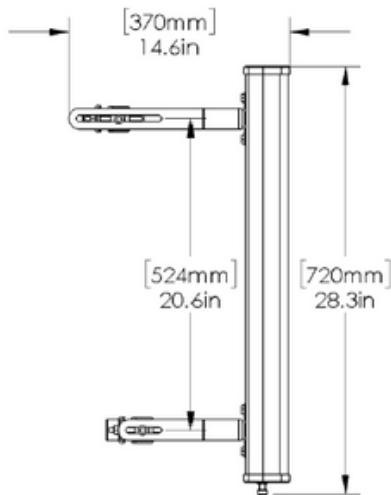
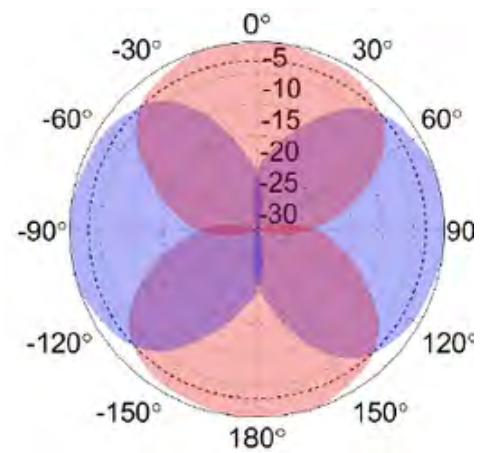
Elevation Pattern



Frequency-Reuse One



ABAB Channel Reuse



HPBW: Average and variation of the antenna's 3dB beamwidth (half power beamwidth) in its horizontal (Azimuth) or vertical (Elevation) pattern.

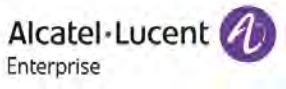
Azimuth Skew: Angle in the antenna's azimuth pattern in which the maximum gain occurs. Reported is the maximum variation in the frequency band.

Electrical Downtilt: Angle in the antenna's elevation pattern in which the maximum gain occurs.

Gain: Antenna's average gain and variation in each frequency band.

Front to Back Ratio @ 180°±30°: Difference between the antenna's maximum gain and the maximum gain in the antenna's back lobe over ±30° angles.

Cross-polarization Ratio over HPBW (dB): Maximum difference between the co-polarization and cross-polarization gain across the sector's HPBW.



DATA SHEET

CNANTGPSKIT

Industrial grade GPS/GLNSS external timing antenna for Celona indoor access point

1.574 GHz to 1.61 GHz, 32 dBi GPS/GLNSS Timing Antenna

- High Selectivity Dual Filter RF Architecture
- Eliminated high Power RFI Operating within Multi-Located Base Station Environment
- Impact Resistant ASA Radome
- Rugged Die-Cast Aluminum Base
- Integrated Bulkhead, TNC Jack
- IP67 Rated
- 0.75" NPT and 1"-14 Marine Mount Compatible
- UV Resistant / Cool Gray for Reduced Visibility
- Mounts to standard pipe up to 1-0.5"
- High grade stainless steel and Dacron plated steel mounting clamps
- Includes surge protector, cables (75ft, 15ft) and mounting brackets

Electrical Specification

		Minimum	Typical	Maximum
Frequency Range	MHz	1,574		1,610
Output VSWR				2:1
Impedance	Ohms		50	
Gain	dBi		32	
Gain Variation	dBi		±3	
Noise Figure	dB		3.1	3.5
Out Of Band Rejection	dB			70
Operating DC Voltage	Volts	2.7		5.5
Current	mA		7	15

Mechanical Specifications

Connector Type	TNC Female
Housing Plating / Color	Gray
Mounting Application	0.75" NPT 316 SS Pipe
Operating Range	-40 °C to +85 °C
Wind Survivability	150 MPH (241.4 KPH)
Humidity	95%

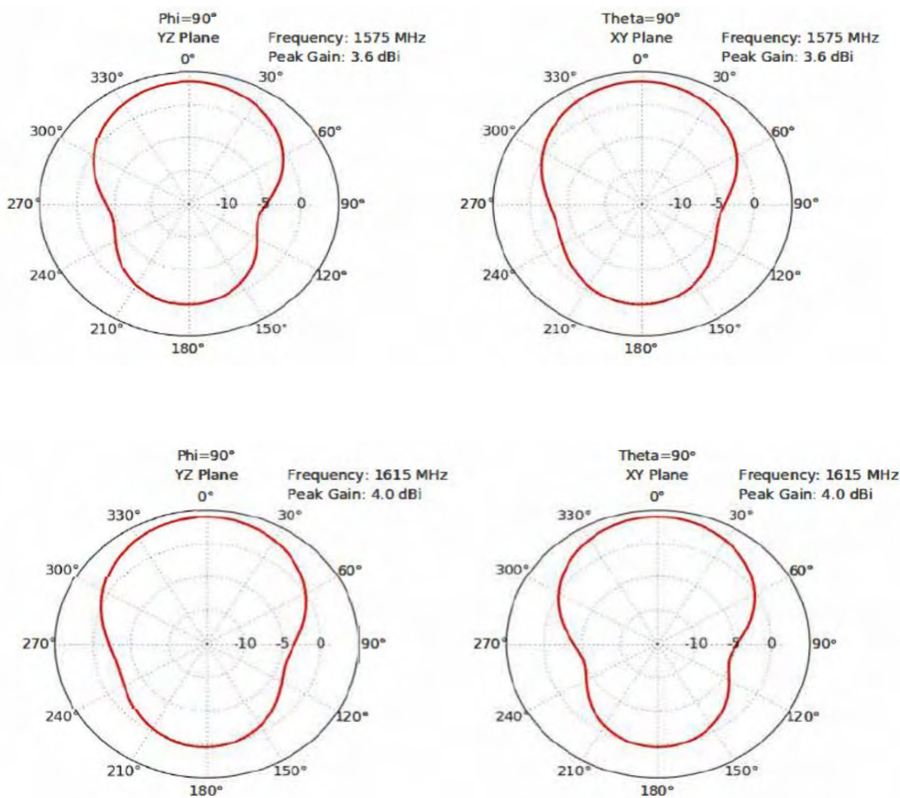
Unit Dimensions

Base Diameter	8.9cm / 3.5"
Height	12.4cm / 4.9"
Weight	6.8 kg / 15 lb

Shipping Dimensions

Length	30.5cm / 12"
Width	30.5cm / 12"
Height	25.4cm / 10"
Net Weight	6.8 kg / 15 lb

Typical Radiation Pattern



Electrical Downtilt: Angle in the antenna's elevation pattern in which the maximum gain occurs.

Gain: Antenna's average gain.

Front to Back Ratio @ 180°±30°: Difference between the antenna's maximum gain and the maximum gain in the antenna's back lobe over ±30° angles.

Cross polarization Ration (dB): Typical difference between the co-polarization and cross-polarization gain across the sector's 3 dB Beam width.

Bullet™ 360 GPS Antenna

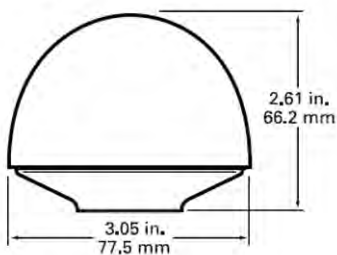
Environmental specifications

Operating Temperature	-40°C to +90°C
Storage Temperature	-40°C to +90°C
Vibration	10 – 200 Hz Log sweep 3g (Sweep time 30 minutes) 3 axes
Shock	50g vertical, 30g all axes
Humidity Soak	+60°C @ 95% RH, 96 hours
Corrosion Salt Resistant	5% Salt spray tested, 96 hours

Physical characteristics – 3.3v & 5v dc antennas

Dimensions	3.05"D x 2.61" H (77.5mm x 66.2mm)
Weight	7.0oz (200grams)
Enclosure	Off-white plastic
Connector	F-type & TNC (5V) – TNC (3.3V only)
Mounting	1" – 14" thread or ¾" pipe thread

MECHANICAL

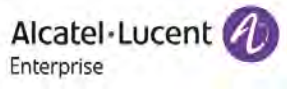


CONNECTORS



Technical / performance specifications

Feature	3.3V	5.0V
Prime Power	3.3V DV (±10%)	5.0V DV (±10%)
Power Consumption	<13mA	<20mA
Gain	26dB ± 3dB (GPS)	28dB ± 3dB (GPS)
Output Impedance	50Ω	
Frequency	GPS L1 1575.42 ±3MHz BDS B1 1561 ±3MHz GLO G1 1602 ±3MHz	
VSWR	2.0 maximum	
Axial ratio	<5dB (GPS) <3dB	
Noise	2.0dB (typical)	
Bandwidth (10dB RL)	70 MHz (min)	
Out of Band rejection	fo = L1, B1, G1 fo ±50 MHz: 30 dB typ fo ±100MHz: 40dB typ	
Azimuth coverage	360° (omni-directional)	360° (omni-directional)
Elevation coverage	0°-90° elevation (hemispherical)	0°-90° elevation (hemispherical)
ESD	IEC 61000-4-2	



DATA SHEET

CNPTPGMKIT

PTP Grandmaster Clock to be used in indoor deployments for access points to be phase synchronized

PTP Grandmaster Clock designed for small cell, 4G and 5G deployments

- IEEE-1588 PTP Grandmaster Clock
 - Multiple PTP Profiles (G.8265.1, G.8275.1, G.8275.2, Telecom-2008 Profil , 802.1AS, Enterprise Profil , Broadcast Profil SMPTE)
- Multi-Constellation (GPS, GLONASS, Beidou & Galileo)
- 15ns (1-sigma) time accuracy relative to GNSS reference
- Includes power adapter, bullet 360 antenna, 75-ft & 12-ft cables and surge protector
- Holdover of $\pm 1.5\mu s$ over 4hours (constant temperature and when locked to GPS for 7 days)
- Inputs: GNSS, 1588-PTP and SyncE
- Outputs: 1588-PTP, NTP, SyncE, PPS, and 10MHz
- Dedicated management port (1xRJ45)
- Network Management: SNMP, Web UI, CLI
- VLAN support
- IPv4 and IPv6

General Specifications

Inputs	GNSS, 1588-PTP, SyncE
Outputs	PPS, 10MHz, NTP, PTP, SyncE
Ethernet Ports	1x Mgmt RJ45 1x 1G SFP 1x 1G RJ45
Protocols	PTP, NTP & SyncE
GNSS Antenna	SMA
Protocols:	IEEE-1588 (PTP), NTPv4, SyncE, IPv4, IPv6, TELNET, SFTP, SSH, RADIUS, TACACS+, SNMP, DAYTIME, TIME
Network management	SNMPv2, v3, HTTPS, CLI
User Interfaces:	CLI : Monitoring and Management Web UI :Monitoring and Management

Performance

Time of day accuracy	15ns (1-sigma) reference GNSS
Time stamp accuracy	<10 ns rms
Frequency accuracy	1.16x10 ⁻¹² (one day ave.) Holdover: <1x10 ⁻¹⁰ /24hrs
Tracking to GPS	<15ns (locked) Holdover: < ±1.5µs/4hrs (7 days locked)
Power consumption	5W average, 10W maximum

Power

DC Power, dual feed	-36VDC to -72VDC
Current consumption	330mA (max)

Regulatory & Standards

Operating Temperature	-40°C to +85°C
Operating Humidity	5%-95% RH non-condensing (+60°C)
Storage temperature	-55°C to +105°C
Safety & Health	UL EN 62368-1 CE, CISPR32 class A GR-63; Level 3 ETSI (EN55032/EN55024) EN 300019, Class T3.2
Electrical	EMC, ESD Immunity & susceptibility FCC Part 15 Class B / ICES 003 Class-B Korea KN32 / KN35 Class A EN 301 489-1, EN 301 489-19 EN 303 413 IEEE 1613-1 Telcordia GR-1089
Synchronization:	ITU: G.8265.x, G.8275.x (PRTC/T-GM) IEEE : PTP (IEEE 1588v2) IETF :NTPv4 (RFC5905)
Product compliance:	2014/53/EU (RED Directive) 2011/65/EU (RoHS2 Directive) 2012/19/EU (WEEE Directive)

Physical Characteristics

Length	20.8cm / 8.2"
Width	20cm / 7.9"
Height	4.4cm / 1.7"
Weight	3kg / 6 lb

DATA SHEET

CNPTPGMPLUSKIT

Scalable PTP Grandmaster Clock for indoor deployments,
supporting phase synchronization for up to 100 access points

PTP Grandmaster Clock designed for small cell, 4G and 5G deployments

- IEEE-1588 PTP Grandmaster Clock
 - Supports multiple PTP Profiles: ITU-T G.8265.1, G.8275.1, G.8275.2, Telecom-2019 Profile, IEEE 802.1AS, Enterprise Profile, Power Profile (C37.238 2011, C37.238-2017) Multi-Constellation (GPS, GLONASS, Beidou & Galileo)
- GNSS Precision Timing
 - Dual-frequency GNSS (L1 & L5)
 - Multi-Constellation support (GPS, GLONASS, Beidou, Galileo)
 - <5ns (1-sigma) time stability when tracking GNSS
 - Anti-jamming and anti-spoofing features
- Timing Accuracy and Holdover
 - 5ns time stability relative to GNSS reference
 - Holdover: $\pm 1.5\mu\text{s}$ over 4 hours (when locked to GPS for 7 days)
- I/O and Connectivity
 - Inputs: GNSS Antenna, 1588-PTP, PPS, SyncE
 - Outputs: 1588-PTP, NTP, SNTP, SyncE, PPS, ToD, 10MHz
 - Ethernet Ports: 4 x 1G/10G SFP+, 2 x 10/100/1000 BASE-T RJ45 (PoE+ available on ETH0)
 - SMA connectors for GNSS Antenna, PPS_IN, PPS_OUT, CLK, FREQ, ToD
- Network Management and Protocols
 - Management: SNMPv2/v3, Web UI (HTTPS), CLI, NETCONF, RESTCONF
 - Protocols: PTP (IEEE 1588v2.1), NTPv4, SNTPv4, SyncE, IPv4, IPv6
- Physical Characteristics
 - Compact 19" half-rack form factor (1U) – 20.8 x 20 x 4.4 cm
 - Dual DC Power (-36VDC to -72VDC), PoE+ PD (optional, up to 25W)
 - Operating temperature: -40°C to +50°C
- Compliance and Standards
 - Safety: UL EN 62368-1, CE
 - EMC: FCC Part 15 Class A, EN 301 489-1, EN 301 489-19
 - Environmental: RoHS, WEEE compliant

General Specifications

Inputs	GNSS, 1588-PTP, SyncE
Outputs	PPS, 10MHz, NTP, PTP, SyncE
Ethernet Ports	4x 1G/10G SFP+, 2x 10/100/1000 BASE-T RJ45 (POE+ available)
Protocols	PTP, NTP & SyncE
GNSS Antenna	SMA (Female)
Protocols:	IEEE-1588 (PTP), NTPv4, SNTPv4, SyncE, IPv4/IPv6, SNMP, SSH, RADIUS, TACACS+
Network management	CLI, Web UI (HTTPS), SNMPv2/v3, NETCONF, RESTCONF
User Interfaces:	CLI : Monitoring and Management Web UI :Monitoring and Management

Performance

Time of day accuracy	15ns (1-sigma) reference GNSS
Time stamp accuracy	<10 ns rms
Frequency stability	1.16x10 ⁻¹² (one-day average)
Tracking to GNSS	<15ns (locked) Holdover: < ±1.5µs/4hrs (7 days locked)
Power consumption	18-20W, POE+ option (25W max)

Power

DC Power, dual feed	-36VDC to -72VDC
Current consumption	500mA (max)

Regulatory & Standards

Operating Temperature	-40°C to +50°C
Operating Humidity	5%-95% RH non-condensing (+60°C)
Storage temperature	-55°C to +105°C
Safety & Health	UL EN 62368-1 CE, CISPR32 class A GR-63; Level 3 ETSI (EN55032/EN55024) EN 300019, Class T3.2
Electrical	EMC, ESD Immunity & susceptibility FCC Part 15 Class B / ICES 003 Class-B Korea KN32 / KN35 Class A EN 301 489-1, EN 301 489-19 EN 303 413 IEEE 1613-1 Telcordia GR-1089
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Product compliance:	2014/53/EU (RED Directive) 2011/65/EU (RoHS2 Directive) 2012/19/EU (WEEE Directive)

Physical Characteristics

Length	20.8cm / 8.2"
Width	20cm / 7.9"
Height	4.4cm / 1.7"