STATE OF CONNECTICUT CONNECTICUT SITING COUNCIL

III ICL.	5 7)		
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A PETITION OF CELLCO PARTNERSHIP		PETITION NO	
D/B/A VERIZON WIRELESS FOR A	•		
DECLARATORY RULING ON THE NEED TO	\$		

OBTAIN A SITING COUNCIL CERTIFICATE
FOR THE INSTALLATION OF A SMALL CELL
TELECOMMUNICATIONS FACILITY IN THE
GOODWIVES RIVER ROAD RIGHT-OF-WAY,

DARIEN, CONNECTICUT : DECEMBER 4, 2018

PETITION FOR A DECLARATORY RULING: INSTALLATION HAVING NO SUBSTANTIAL ADVERSE ENVIRONMENTAL EFFECT

I. Introduction

IN RE.

Pursuant to Sections 16-50j-38 and 16-50j-39 of the Regulations of Connecticut State Agencies ("R.C.S.A."), Cellco Partnership d/b/a Verizon Wireless ("Cellco") hereby petitions the Connecticut Siting Council (the "Council") for a declaratory ruling ("Petition") that no Certificate of Environmental Compatibility and Public Need ("Certificate") is required under Section 16-50k(a) of the Connecticut General Statutes ("C.G.S.") to install a new "small cell" wireless telecommunications facility within the public right of way of Goodwives River Road, near property at 53 Goodwives River Road, in Darien, Connecticut. Cellco has identified this installation as its "Darien SC14 Facility" (hereafter, the "Facility").

II. Factual Background

Cellco currently experiences a significant capacity problem with its Beta Sector antennas at the existing "Darien" cell site at 126 Ledge Road in Darien. Cellco proposes to provide capacity relief by establishing a new small cell wireless facility along Goodwives River Road.

The Facility would be attached on a new, untagged utility pole located within the Goodwives River Road right of way, near 53 Goodwives River Road, Darien, Connecticut. ¹

A. Cellco's Service

Cellco is licensed to provide wireless telecommunications services in the 850 MHz, 1900 MHz, 700 MHz and 2100 MHz frequency ranges in Darien and throughout the State of Connecticut. The proposed Facility would provide wireless service in Cellco's 2100 MHz frequency range only.

B. Proposed "Small Cell" Facility

Cellco proposes to attach a canister antenna to the top of a 34-foot wood pole. Radio equipment associated with the "small cell" antenna would be attached to the lower portion of the pole approximately twelve (12) feet above grade. A service disconnect box would be located below the radio equipment, approximately 8.5 feet above grade. Project plans showing additional details of the proposed Facility as well as specifications for the small cell antenna and remote radio head are included in <u>Attachment 1</u>. Power to the Facility will extend from existing service on an Eversource utility pole on the east side of Goodwives River Road.

C. Council Jurisdiction

Connecticut law provides the Council with jurisdiction over certain "facilities," including "telecommunication towers." Council regulations clarify that a "tower" under its authority is to be "used principally to support one or more antennas for receiving or sending radio frequency

¹ The new pole will be owned by The Connecticut Light and Power Company d/b/a Eversource ("Eversource") and will be installed for use by Cellco only, subject to the terms and conditions of a master pole attachment license agreement between Cellco and Eversource.

² See Conn. Gen. Stat. § 16-50i(a)(6).

III. Discussion

A. The Proposed Facility Modifications Will Not Have A Substantial Adverse Environmental Effect

The Public Utility Environmental Standards Act (the "Act"), C.G.S. § 16-50g et seq., provides for the orderly and environmentally compatible development of telecommunications towers in the state to avoid "a significant impact on the environment and ecology of the State of Connecticut." C.G.S. § 16-50g. To achieve these goals, the Act established the Council, and

³ Regs. of Conn. State Agencies § 16-50j-2a(30)(A) (emphasis added).

⁴ This jurisdictional distinction was recently reiterated by the Council. See Siting Council Comments, Public Utilities Regulatory Authority, Docket 16-06-38, Request for Declaratory Ruling by the Town of Greenwich et al Regarding Regulatory Authority Over Small Cell Wireless Facilities (Aug. 4, 2016). See also Opinion, Council Petition 809, Extenet Systems, Inc. petition for a declaratory ruling that the Connecticut Siting Council does not have jurisdiction or, in the alternative, that no Certificate of Environmental Compatibility and Public Need is required for the proposed construction of a Distributed Antenna System along the Merritt Parkway from New York state line to Westport, Connecticut (Nov. 5, 2007).

requires a Certificate of Environmental Compatibility and Public Need for the construction of cellular telecommunication towers "that may, as determined by the council, have a substantial adverse environmental effect". C.G.S. § 16-50k(a).

1. Physical Environmental Effects

Cellco respectfully submits that the new pole, canister antenna and associated radio and electrical equipment will not involve a significant alteration in the physical and environmental characteristics of the Goodwives River Road right of way or any adjacent parcels. No tree removal is required for Eversource to install or Cellco to utilize this new pole.

2. <u>Visual Effects</u>

The utility pole installed for use by Cellco will be one of several wood poles located along Goodwives River Road. The other existing poles are currently used as part of the Eversource electric distribution system in this area. The new pole that Cellco intends to use to support the Facility would be no more visible than any of the existing poles along Goodwives River Road and would be seen almost exclusively from locations within the street right-of-way. The visual impacts of the new "small cell" pole would, therefore, be minimal and limited.

3. FCC Compliance

The Federal Communications Commission ("FCC") has adopted a standard for exposure to radio frequency ("RF") emissions from wireless telecommunications facilities like the Facility. To ensure compliance with the FCC's standard, Cellco has performed a worst-case RF emissions calculation for the proposed Facility according to the methodology prescribed by the FCC Office of Engineering and Technology Bulletin No. 65 (OST Bulletin 65) (August 1997). The calculation is a conservative, worst-case approximation for RF emissions at the closest accessible point to the antenna, in this case the base of the utility pole, and assumes that the antenna is

transmitting on all available channels at full power and that all of the RF energy from the Facility is directed toward the base of the pole. Under these absolute worst-case conditions, the calculation indicates that the MPE level for the Facility (2145 MHz antenna) would be 28.76% of the FCC's standard. The General Power Density table for RF emissions at the Facility is included as <u>Attachment 2</u>.

FAA Summary Report

Included in <u>Attachment 3</u> is a Federal Airways & Airspace Summary Report verifying that the new 34-foot utility pole along Goodwives River Road would not constitute an obstruction or hazard to air navigation and would not require obstruction marking or lighting. Notification to the FAA is not required.

B. Notice to Municipal Officials and Adjoining Landowners

On December 4, 2018, a copy of this Petition was sent to Jayme Stevenson, Darien's First Selectwoman and Jeremy Ginsberg, Darien's Planning & Zoning Director. Notice and a copy of this Petition was also sent to adjoining landowners. A copy of the Adjoining Owners Map is included in Attachment 4. Included in Attachment 5 is a copy of the notice letter sent to Ms. Stevenson and Mr. Ginsberg, a sample abutter's letter, and the list of the adjoining landowners who were sent notice of the filing of the Petition.

⁵ The Public Utility Regulatory Authority directed wireless service providers like Cellco to provide notice to "property owners whose property is actually physically contiguous to the affected section of the [public right-of-way] and to those property owners that are across the street from the contiguous properties to the utility pole to which the small cell antenna will be attached." Public Utilities Regulatory Authority Decision, Docket No. 17-02-49, *PURA Formalization of Small Cell Antenna Applicant Processes and Procedures to Construct Facilities in Connecticut's Public Rights-of-Way*, at 12 (Jun. 2, 2017).

IV. Conclusion

Based on the information provided above, Cellco respectfully requests that the Council issue a determination in the form of a declaratory ruling that the installation of the Facility on the utility pole located within the right of way of Goodwives River Road in Darien will not have a substantial adverse environmental effect and does not require the issuance of a Certificate of Environmental Compatibility and Public Need pursuant to § 16-50k of the General Statutes.

Respectfully submitted,

CELLCO PARTNERSHIP d/b/a VERIZON WIRELESS

Kenneth C Baldwin, Esc

Robinson & Cole LLP 280 Trumbull Street

Hartford, CT 06103-3597

(860) 275-8200

Its Attorneys

ATTACHMENT 1

DARIEN SC14 CT

GOODWIVES RIVER RD, DARIEN, CT 06820

LAT: 41°03'52.11"(N) (41.064477) (N)

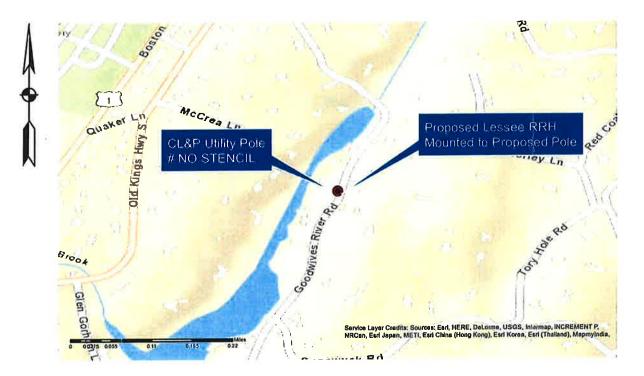
LONG: 73°28'30.46"(W) (73.475128) (W)

CL&P Utility Pole # NO STENCIL

Proposed Lessee RRH Mounted to Proposed Pole

Mounted to Proposed Pole

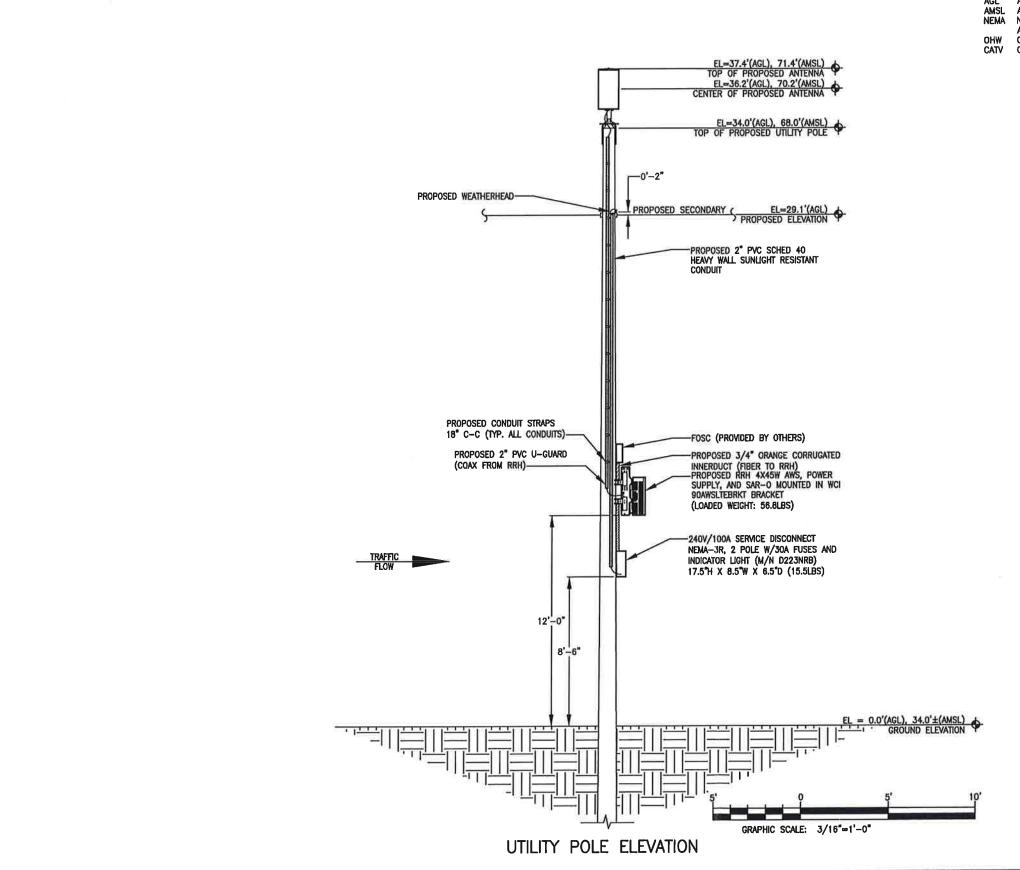




STREET MAP

DEFINITIONS: RRH REMOTE RADIO HEAD
SAR-O
AWS SERVICE AGGREGATION ROUTER
ADVANCED WIRELESS SERVICE
FOSC FIBER OPTICAL SPLICE CLOSURE
ABOVE GROUND LEVEL
AMSL ABOVE MEAN SEA LEVEL
NEMA NATIONAL ASSOCIATION OF ELECTRICAL EQUIPMENT
AND MEDICAL IMAGING MANUFACTURERS
OHW OVERHEAD WIRE
CATY COMMUNITY ANTENNA TELEVISION

LEASE EXHIBIT
THIS LEASE IS SCHEMATIC IN NATURE AND IS
INTENDED TO PROVIDE GENERAL INFORMATION PROPOSED WIRELESS COMMUNICATION FACILITY. THE SITE LAYOUT WILL BE FINALIZED UPON COMPLETION OF A SITE SURVEY AND FACILITY DESIGN. verizon V SUBMITTALS ISSUED FOR A 8/8/18 INITIAL ISSUE 16 Middle Street 4th Floor T: (207) 591-6427 F: (207) 772-3427 info@tilsontech.com tilsontech.com DARIEN SC14 CT GOODWIVES RIVER RD DARIEN, CT 06820 FAIRFIELD COUNTY KEY PLAN SHEET: LE-1 DRAFTED BY: APPROVED BY:



GENERAL NOTES

S: RRH REMOTE RADIO HEAD SAR-O SERVICE AGGREGATION ROUTER DEFINITIONS: RRH ADVANCED WIRELESS SERVICE FIBER OPTICAL SPLICE CLOSURE

ABOVE GROUND LEVEL
ABOVE MEAN SEA LEVEL
NATIONAL ASSOCIATION OF ELECTRICAL EQUIPMENT

AND MEDICAL IMAGING MANUFACTURERS OVERHEAD WIRE

COMMUNITY ANTENNA TELEVISION

SITE NAME: DARIEN SC14 CT SITE ADDRESS:

GOODWIVES RIVER RD DARIEN, CT 06820 FAIRFIELD COUNTY LAT: 41'03'52.11"(N) LONG: 73'28'30.46"(W) GROUND EL: 34.0' POLE LOCATION:

POLE NUMBER: NO STENCIL POLE OWNER: CL&P

TELCO-FC, ELECO-CL&P SERVICE AREA: CELLCO PARTNERSHIP D/B/A VERIZON WIRELESS APPLICANT:

ROW OWNER: MAP/BLOCK/LOT: UNK

LEASE EXHIBIT
THIS LEASE IS SCHEMATIC IN NATURE AND IS
INTENDED TO PROVIDE GENERAL INFORMATION REGARDING THE LOCATION AND SIZE OF THE PROPOSED WIRELESS COMMUNICATION PACILITY. THE SITE LAYOUT WILL BE FINALIZED UPON COMPLETION OF A SITE SURVEY AND FACILITY DESIGN.

PREPARED FOR:

verizon V

SUBMITTALS

REV	DATE	ISSUED FOR
A	8/8/18	initial issue
_		





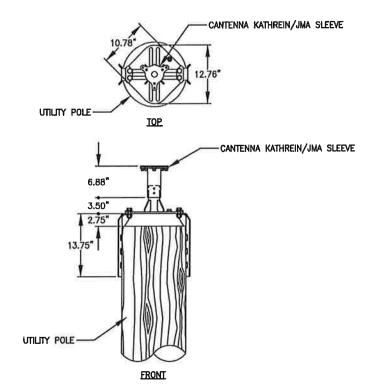
16 Middle Street 4th Floor T: (207) 591-6427 F: (207) 772-3427 info@tilsontech.com tilsontech.com

DARIEN SC14 CT GOODWIVES RIVER RD DARIEN, CT 06820 FAIRFIELD COUNTY

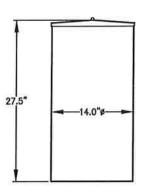
> **ELEVATION** DETAILS

> > REV

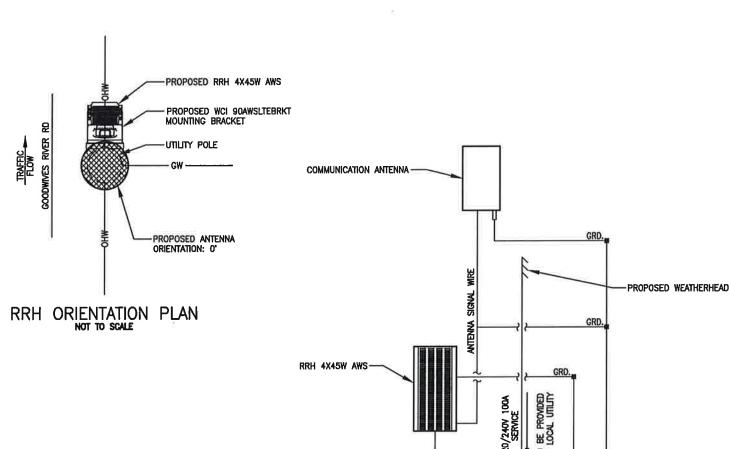
SHEET: DRAFTED BY: APPROVED BY:



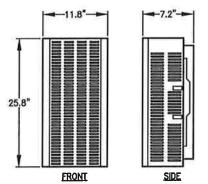
CONCEALFAB BRACKET DETAILS P/N 007951-4 & 007942-1-4 NET WEIGHT: 33.9LBS NOT TO SCALE



JMA ANTENNA DETAILS CSS CX060MI236-1C WEIGHT: 38.6LBS NOT TO SCALE



SERVICE DISCONNECT-



RRH DETAILS B66A RRH 4X45W AWS WEIGHT: 56.8LBS NOT TO SCALE

GENERAL NOTES

SITE NAME: SITE ADDRESS:

: RRH REMOTE RADIO HEAD SAR-O SERVICE AGGREGATION ROUTER

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ONE-LINE DIAGRAM

GRD.

CROSS BOND

GROUND RODS

ADVANCED WIRELESS SERVICE FIBER OPTICAL SPLICE CLOSURE

COMMUNITY ANTENNA TELEVISION

ABOVE GROUND LEVEL
ABOVE MEAN SEA LEVEL
NATIONAL ASSOCIATION OF ELECTRICAL EQUIPMENT
AND MEDICAL IMAGING MANUFACTURERS

DEFINITIONS: RRH

DARIEN SC14 CT GOODWIVES RIVER RD DARIEN, CT 06820 FAIRFIELD COUNTY

POLE LOCATION:

LAT: 41'03'52.11"(N) LONG: 73'28'30.46"(W) GROUND EL: 34.0'

NO STENCIL POLE NUMBER: POLE OWNER: CL&P

SERVICE AREA:

TELCO-FC, ELECO-CL&P CELLCO PARTNERSHIP D/B/A VERIZON WIRELESS APPLICANT:

ROW OWNER: PUBLIC

MAP/BLOCK/LOT: UNK

LEASE EXHIBIT
THIS LEASE IS SCHEMATIC IN NATURE AND IS
INTENDED TO PROVIDE GENERAL INFORMATION
REGARDING THE LOCATION AND SIZE OF THE
PROPOSED WIRELESS COMMUNICATION FACILITY. THE SITE LAYOUT WILL BE FINALIZED UPON COMPLETION OF A SITE SURVEY AND FACILITY DESIGN.

PREPARED FOR:



SUBMITTALS REV DATE A 8/8/18 INITIAL ISSUE



16 Middle Street 4th Floor T: (207) 591-6427 F: (207) 772-3427 info@tilsontech.com tilsontech.com

DARIEN SC14 CT GOODWIVES RIVER RD DARIEN, CT 06820 FAIRFIELD COUNTY

EQUIPMENT

DRAFTED BY:

DETAILS APPROVED BY:

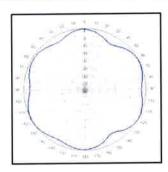
LE-3 0



NWAV™ X-Pol OMNI Cantenna | Hex-Port | 2 ft | 360°

Hex-Port 2 ft 360° Cantenna with RET-controlled HB (2) 698-960 MHz & (4) 1695-2700 MHz

- X-Pol, small cell, Hex-Port antenna
- Suitable for pole or building mount
- 2x2 MIMO low-band and 4x4 MIMO high-band
- Internal beam combining
- Dependent RET control for HB ports
- Suitable for LTE/UMTS/CDMA/GSM technologies
- Cost-effective solution for neutral host locations



Omni Clover



Electrical specification (minimum/maximum)		Ports 1, 2		Ports 3, 4, 5, 6				
Frequency bands, MHz	698- 798	824- 894	880- 960	1695- 1880	1850- 1990	1920- 2180	2300- 2500	2500- 2690
Polarization		± 45°				± 45°		
Average gain over all tilts, dBi	5.7	5.7	5.1	9.4	9.7	9.9	10.1	10.2
Horizontal beamwidth (HBW), degrees		360°				360°		
Vertical beamwidth, (VBW), degrees ¹	40°	35º	32º	32° 15.7° 14.6° 13.7° 12.6°				11.7º
Electrical downtilt (EDT) range, degrees		2º (FET)		2-8° (MET/RET)				
Cross polar isolation, port-to-port, dB¹	25	25	25	25 25 25 25 2				25
Maximum VSWR/return loss, dB		1.5:1/ -14.0)	1.5:1/ -14.0				
Maximum passive intermodulation (PIM), 2x 20 W carrier, dBc	-153 -153							
Maximum input power per any port, watts		250				150		

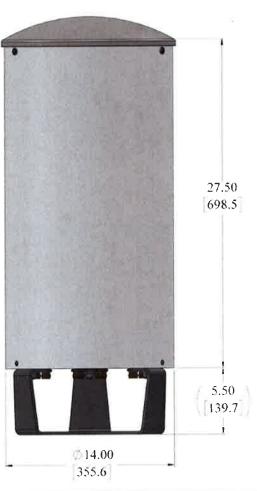
¹ Typical value over frequency and tilt



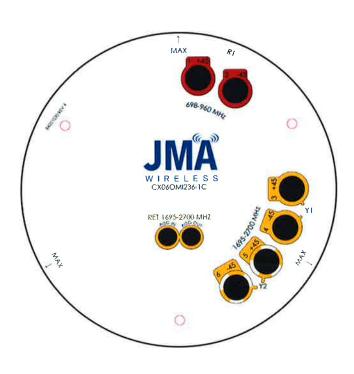
NWAV™ X-Pol OMNI Cantenna | Hex-Port | 2 ft | 360°

Mechanical specifications							
Dimensions height/diameter, inches (mm)	27.5/14 (698.5/355)						
No. of RF input ports, connector type and location	6 x 4.3-10 female, bottom						
RF connector torque	96 lbf·in (10.85 N m or 8 lbf·ft)						
Net antenna weight, lbs. (kg)	38.6 (17.5)						
Rated wind survival speed, mph (km/h)	150 (241)						
Frontal wind loading @ 160 km/h, lbf (N)	47.6 (211.5)						
Equivalent flat plate @100 mph and Cd=2, sq. ft	0.96						

Front view



End view



Ordering information	
Antenna model	Description
CX06OMI236-1C	2F X-Pol HEX OMNI 360° LB 2° FET, HB 2-8° RET, 4.3-10

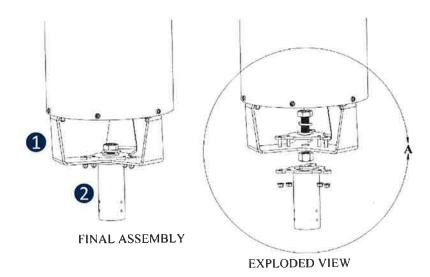




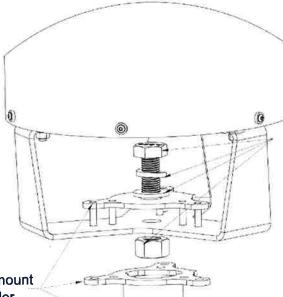
Notes on cylinder brackets:

- All CX* antennas come with the bottom mount bracket (marked as 1) factory installed (all factory testing is done with bracket attached)
- Hardware is included with each antenna to connect bottom bracket to different mounting systems
- JMA cylinder brackets are compatible with bottom mount via universal cantenna mount sleeve (marked as 2) included with JMA cylinder mounting systems.

Example bracket configuration



Mounting details



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Included with antenna:

7/8" bolt, washer, nut (Torque to 202 lbf·ft)

Sold separately:

Universal cantenna mount sleeve for JMA cylinder brackets (SC-BKT-SLA)

Small Cell solutions and mou	unting systems			
Side Arm Mounting System	SC-BKT-SA-(color)			
Steel Pole Mounting System	SC-BKT-SLA-(color)			
Wide Diameter Pole	SC-BKT-WTPE-(color)			
Rooftop Ballasted Mounting System	SC-BKT-RTB-(color)			

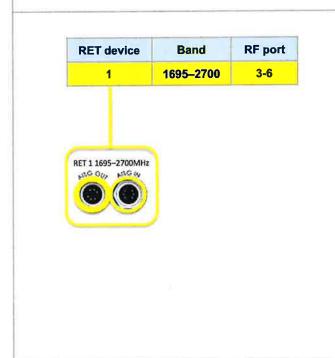


NWAV™ X-Pol OMNI Cantenna | Hex-Port | 2 ft | 360°

Remote Electrical Tilt (RET 1000) information							
RET location	Integrated into antenna						
RET interface connector type	8-pin AISG connector per IEC 60130-9						
RET interface connector quantity	2 pairs of AISG male/female connectors						
RET interface connector location	Bottom of the antenna						
Total No. of internal RETs high bands	1						
RET input operating voltage, vdc	10-30						
RET max power consumption, idle state, W	≤ 2.0						
RET max power consumption, normal operating conditions, W	≤ 13.0						
RET communication protocol	AISG 2.0/ 3GPP						

RET topology

A single RET device controls all 3 sectors via the designated external AISG connector as shown below

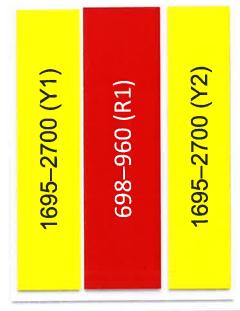


Array topology

3 sets of radiating arrays

R1: 698–960 MHz Y1: 1695–2700 MHz Y2: 1695–2700 MHz

Band	RF Port
1695–2700	3-4
698–960	1–2
1695–2700	5–6



ALCATEL-LUCENT B66A RRH4X45

The Alcatel-Lucent B66a Remote Radio Head 4x45 is the newest addition of Remote Radio Head to the extended product line of Alcatel-Lucent's distributed Base Station solutions, aimed at facilitating smooth RF site acquisition and related civil engineering. Its operational range covers beyond that of B4 (AWS) and B10 (AWS+).

Supporting 2Tx/4Tx MIMO and 2-way/4-way Rx diversity, the Alcatel-Lucent B66a RRH4x45 allows operators to have a compact radio solution to deploy LTE in the 2100 band (3GPP band 4, 10, and 66), providing them with the means to achieve high capacity, high quality, high reliability, large instantaneous bandwidth, and high coverage with minimum site requirements.

The Alcatel-Lucent B66a RRH4x45 product has four transmit RF paths, offering the possibility to **select**, **via software only**, **2Tx or 4Tx MIMO configurations** with either 2x90W or 4x45W RF output power. It also supports 4-way Rx diversity at the 70 MHz instantaneous bandwidth.

The Alcatel-Lucent B66a RRH4x45 is a compact (near zero-footprint) solution and operates noise free, simplifying negotiations with site property owners and minimizing environmental impacts.

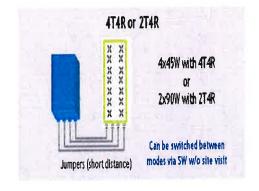
Its compactness and slim design makes the Alcatel-Lucent B66a RRH4x45 easy to install close to the antenna: operators can therefore locate this Remote Radio Head where RF design conditions are deemed ideal, minimizing trade-offs between available sites and RF optimum sites, together with reducing the RF feeder needs and installation costs.

FEATURES

- Supporting LTE in 2110 2180 MHz band/DL, 1710-1780MHz/UL (3GPP band 4, 10, and 66a)
- LTE 2Tx or 4Tx MIMO (SW selectable)
- Configuration: 2T2R/2T4R/4T4R
- Output power: Up to 2x90W or 4x45W (SW configurable)
- 70MHz LTE carrier with 4Rx Diversity
- Convection-cooled (fan-less)
- Supports AISG 2.0 ALD devices (RET, TMA) through RS485 or RF ports

BANGELIS

- Compact to reduce additional footprint when adding LTE in AWS 1-3 band
- Selection of MIMO configuration (2Tx or 4Tx) by software only
- Improves downlink spectral efficiency through 4Tx MIMO
- Increases LTE coverage thanks to 4Rx diversity capability and best in class Rx sensitivity
- Flexible mounting options: Pole or Wall





	Features & Performance
Number of TX/RX goths	4 duplexed (either 4T4R or 2T4R selectable by SW)
Prequency band	AWS 1-3, B4/B66a DL: 2110-2180 MHz / UL: 1710-1780 MHz
Instantaneous bandwidth - #carriers	70 MHz - 4 LTE MIMO carriers (in 70 MHz occupied bandwidth)
LTE carrier bandwidth.	5, 10, 15, 20 MHz
RF output power	2x90W or 4x45W (selectable by SW)
Noise figure - RX Diversity scheme Receiver Sensivity (FRC A1-3)	2 dB typical (<2.5 dB max) – 2 or 4 way Rx diversity -104.5 dBm maximum
Sizes (HxWxD) in mor (in-):	655x299x182 (25.8x11.8x7.2) (with solar shield) 640x290x160 (25.2x11.4x6.3) (without solar shield)
Volume in Liters	35.5 (with solar shield) 29.7 (without solar shield)
Weight in kg (III) (W/o mounting HW)	25.8kg (56.8lb) (with solar shield)
DC voltage range	Nominal: -48V, -40.5 to -57V at full performance, -38 to -57V with relaxation on power consumption
DC power consumption	750W typical @100% RF load (in 2Tx or 4Tx mode); Add 58W for 2A*29V for AISG
Environmental conditions	-40°C (-40°F) /+55°C (+131°F) UL50E Type 4 Enclosure
Wind load (#150km/h or 93mph)	250N (56lb) Frontal/150N (34lb) Lateral
Antenna parts	4 ports 4.3-10 female (50 ohms) VSWR < 1.5
CPRE parts	2 CPRI ports (HW ready for Rate 7, 9.8 Gbps) SFP: SMDF (HW supports also SMSF and MMDF)
AISG Interfaces	1 AISG 2.0 output (RS485) Integrated Smart Bias Tees (x2)
Misc. Interfaces	4 external alarms (1 connector) 1 DC connector (2 pins)
Installation conditions	Pole and wall mounting
Regulatory compliance	3GPP 36.141 / 3GPP 36.113 / GR-487 / GR-1089-CORE / GR-3108-CORE / UL 60950-1 / FCC Part 27 / FCC Part 15 / GR-3178-CORE

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ATTACHMENT 2

Darien SC 14 CT **Cumulative Power Density** Site Name:

Operator	Operating Frequency	Number of Trans.	ERP Per Trans.	Total	Distance to Target	Calculated Power Density	Maximum Permissible Exposure*	Fraction of MPE
	(MHz)		(watts)	(watts)	(feet)	(mW/cm^2)	mW/cm^2) (mW/cm^2)	(%)
VZW PCS	1970	0	1802	0	36.2	0.000.0	1.0	%00.0
VZW Cellular	698	0	347	0	36.2	0.000.0	0.57933333	%00.0
VZW AWS	2145	-	1048	1048	36.2	0.2876	1.0	28.76%
VZW 700	746	0	625	0	36.2	0.000.0	0.497333333	%00.0
Fotal Percentage	ntage of Ma	iximum P	of Maximum Permissible Exposure	le Expos	ure			28.76%

Total Percentage of Maximum Permissible Exposure

*Guidelines adopted by the FCC on August 1, 1996, 47 CFR Part 1 based on NCRP Report 86, 1986 and generally on ANSI/IEEE C95.1-1992

MHz = Megahertz

mW/cm^2 = milliwatts per square centimeter ERP = Effective Radiated Power

Absolute worst case maximum values used.

ATTACHMENT 3

DARIENSC14 SRP.txt

******************* Federal Airways & Airspace * Summary Report: Alteration Of Existing Structure *

Airspace User: Not Identified

File: DARIENSC14

Location: Norwalk, CT

Longitude: 73°-28'-30.46" Latitude: 41°-03'-52.11"

SITE ELEVATION AMSL.....34 ft. STRUCTURE HEIGHT.........37 ft. OVERALL HEIGHT AMSL.....71 ft. SURVEY HEIGHT AMSL......71 ft.

NOTICE CRITERIA

FAR 77.9(a): NNR (DNE 200 ft AGL) FAR 77.9(b): NNR (DNE Notice Slope) FAR 77.9(c): NNR (Not a Traverse Way)

FAR 77.9: NNR FAR 77.9 IFR Straight-In Notice Criteria for HPN FAR 77.9: NNR (No Expected TERPS® impact BDR) FAR 77.9(d): NNR (Off Airport Construction)

NR = Notice Required

NNR = Notice Not Required

PNR = Possible Notice Required (depends upon actual IFR procedure) For new construction review Air Navigation Facilities at bottom of this report.

If the proposed construction is an alteration to an existing structure, notice requirements may be superceded by the item exemptions listed below.

The location and analysis were based upon an existing structure. However, no existing aeronautical study number was identified. If the 'existing structure penetrates an obstruction surface defined by CFR 77.17, 77.19 77.21 or 77.23 (see below) it is strongly recommended the FAA be notified of the 'existing' structure to determine obstruction marking or lighting requirements. It is not uncommon for the FAA to issue a Determination of No Hazard (DNH) for an existing structure and modify the airspace to accommodate the structure, should that be required. If the FAA issues a DNH enter the aeronautical study number (ASN) in the space provided on the Airspace Analysis Window Form and re-run Airspace.

No frequencies were identified in this alteration are included in the FAA's Co-Location Policy published in the Federal Register November 15, 2007. Therefore, application of the Co-Location Policy notice exemption rule can not be applied.

Title 14 CFR Part 77.9(e), Notice Criteria Exception: The location and analysis were based upon an existing antenna structure with the alteration limited to the addition of an antenna with a height increase of more than one (1) foot. Title 14 CFR Part 77.9(e)(4) specificially prohibits application of this rule when adding an antenna to an existing antenna structure. If the increase in height of the existing antenna

exceeds notice regirements, notice to the FAA is mandatory.

```
DARIENSC14 SRP.txt
  FAR 77.17(a)(1): DNE 499 ft AGL
  FAR 77.17(a)(2): DNE - Airport Surface
  FAR 77.19(a):
                    DNE - Horizontal Surface
                    DNE - Conical Surface
  FAR 77.19(b):
                    DNE - Primary Surface
  FAR 77.19(c):
                    DNE - Approach Surface
DNE - Approach Transitional Surface
  FAR 77.19(d):
  FAR 77.19(e):
  FAR 77.19(e):
                    DNE - Abeam Transitional Surface
VFR TRAFFIC PATTERN AIRSPACE FOR: HPN: WESTCHESTER COUNTY
Type: A RD: 62013 RE: 387.7
  FAR 77.17(a)(1):
                              DNE
                              DNE - Greater Than 5.99 NM.
  FAR 77.17(a)(2):
  VFR Horizontal Surface:
                              DNE
  VFR Conical Surface:
                              DNE
  VFR Primary Surface:
                              DNE
  VFR Approach Surface:
                              DNE
  VFR Transitional Surface: DNE
VFR TRAFFIC PATTERN AIRSPACE FOR: BDR: IGOR I SIKORSKY MEMORIAL
          RD: 100404.9
                         RE: 5.7
Type: A
  FAR 77.17(a)(1):
                              DNE
                              DNE - Greater Than 5.99 NM.
  FAR 77.17(a)(2):
                              DNE
  VFR Horizontal Surface:
  VFR Conical Surface:
                              DNE
  VFR Primary Surface:
                              DNE
  VFR Approach Surface:
                              DNE
  VFR Transitional Surface: DNE
TERPS DEPARTURE PROCEDURE (FAA Order 8260.3, Volume 4)
  FAR 77.17(a)(3) Departure Surface Criteria (40:1)
  DNE Departure Surface
MINIMUM OBSTACLE CLEARANCE ALTITUDE (MOCA)
FAR 77.17(a)(4) MOCA Altitude Enroute Criteria
  The Maximum Height Permitted is 1000 ft AMSL
PRIVATE LANDING FACILITIES
                                             BEARING
                                                         RANGE DELTA ARP FAA
  FACIL
                                                         IN NM ELEVATION IFR
  IDENT TYP NAME
                                             To FACIL
                                               244.29
                                                          2.85
                                                                   +21
  5CT8 HEL CANAL STREET
  No Impact to Private Landing Facility
Structure is beyond notice limit by 12317 feet.
                                                                    -72
                                                49.42
                                                          3.28
  CT56 HEL 50 WASHINGTON STREET
  No Impact to Private Landing Facility
  Structure 72 ft below heliport.
                                                41.78
                                                          3.64
                                                                    -85
  5CT4 HEL NORWALK HOSPITAL
  No Impact to Private Landing Facility
  Structure 85 ft below heliport.
                                                53.72
                                                          4.9
                                                                    +11
  1CTO HEL NORDEN SYSTEMS
  No Impact to Private Landing Facility
  Structure is beyond notice limit by 24773 feet.
                                                          5.24
                                                                    -209
  9CT1 HEL THE TOWERS
                                                23.73
  No Impact to Private Landing Facility
  Structure 209 ft below heliport.
                                                                    -94
                                                22.42
                                                          5.69
  CT91 HEL USSC
  No Impact to Private Landing Facility
```

Page 2

DARIENSC14 SRP.txt

Structure 94 ft below heliport.

	AIR NA FAC	VIGATION ELE	CTRC ST	NIC FAC	CILITIES		DELTA			GRND
APCH	IDNT	TYPE	АТ	FREQ	VECTOR	(ft)	ELEVA	ST	LOCATION	ANGLE
BEAR								===		
	HPN	RADAR	ON	2735.	272.68	66313	-439	NY	WESTCHESTER COUNT	38
	The	mpact. Alter studied loca calculated R location an	tion	is with	thin 20 Of-Sight	NM of a	a Radaı distar	r fa ice	acility. is: 38 NM.	
	CMK	VOR/DME	R	116.6	339.62	83820	-623	NY	CARMEL	43
	BDR	VOR/DME	R	108.8	69.95	102789	+62	СТ	BRIDGEPORT	.03
	DPK	VOR/DME	R	117.7	154.56	110095	-52	NY	DEER PARK	03
	ISP	RADAR	ON	2735.	131.99	140850	-111	NY	LONG ISLAND MacAR	05
	LGA	VOR/DME	R	113.1	226.62	149292	+62	NY	LA GUARDIA	.02
	JFK	RADAR	ON	2755.	207.41	174534	-16	NY	JOHN F KENNEDY IN	01
	JFK	VOR/DME	R	115.9	207.44	177322	+60	NY	KENNEDY	.02
	TEB	VOR/DME	R	108.4	243.94	180219	+68	NJ	TETERBORO	.02
	КОКХ	(RADAR WXL	Υ		113.43	183715	-124	NY	NEW YORK	04
	CCC	VOR/DME	R	117.2	104.97	193050	-14	NY	CALVERTON	0.00
	CRI	VOR/DME	R	112.3	215.03	201450	+61	NY	CANARSIE	.02
	QVH	RADAR ARSR	Υ	1326.9	107.54	227864	-280	NY	RIVERHEAD	07
	SWF	RADAR	Υ	2765.	312.06	232690	-650	NY	STEWART INTERNATI	16
	EWR	RADAR	Υ		234.02	233615	-79	NJ	NEWARK ASDE	02
	EWR	RADAR	ON	2715.	233.82	242797	-35	NY	NEWARK INTERNATIO	01

CFR Title 47, §1.30000-§1.30004

AM STUDY NOT REQUIRED: Structure is not near a FCC licensed AM station. Movement Method Proof as specified in §73.151(c) is not required. Please review 'AM Station Report' for details.

Nearest AM Station: WSTC @ 4750 meters.

Airspace® Summary Version 18.11.520

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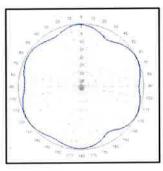
11-28-2018 15:08:04



NWAV™ X-Pol OMNI Cantenna | Hex-Port | 2 ft | 360°

Hex-Port 2 ft 360° Cantenna with RET-controlled HB (2) 698-960 MHz & (4) 1695-2700 MHz

- X-Pol, small cell, Hex-Port antenna
- Suitable for pole or building mount
- 2x2 MIMO low-band and 4x4 MIMO high-band
- Internal beam combining
- Dependent RET control for HB ports
- Suitable for LTE/UMTS/CDMA/GSM technologies
- Cost-effective solution for neutral host locations







Electrical specification (minimum/maximum)		Ports 1, 2		Ports 3, 4, 5, 6				
Frequency bands, MHz	698- 798	824- 894	880- 960	1695- 1880	1850- 1990	1920- 2180	2300- 2500	2500- 2690
Polarization		± 45°				± 45°		
Average gain over all tilts, dBi	5.7	5.7	5.1	9.4	9.7	9.9	10.1	10.2
Horizontal beamwidth (HBW), degrees	360°					360°		
Vertical beamwidth, (VBW), degrees¹	40° 35° 32° 15.7° 14.6° 13.7° 12.6° 1					11.7º		
Electrical downtilt (EDT) range, degrees		2º (FET)		2–8° (MET/RET)				
Cross polar isolation, port-to-port, dB¹	25	25	25	25 25 25 25 25				25
Maximum VSWR/return loss, dB		1.5:1/ -14.0		1.5:1/ -14.0				
Maximum passive intermodulation (PIM), 2x 20 W carrier, dBc	-153							
Maximum input power per any port, watts		250				150		

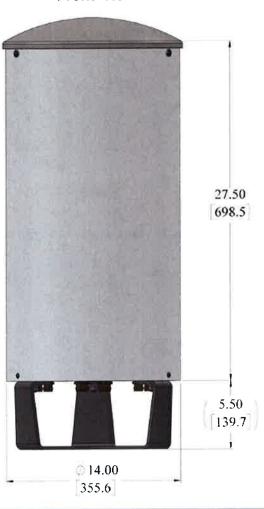
¹ Typical value over frequency and tilt



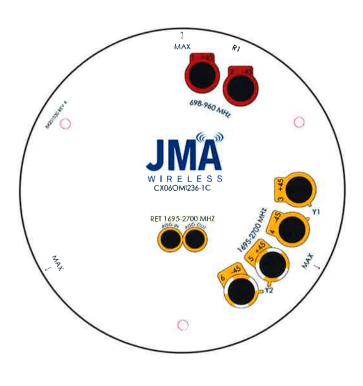
NWAV™ X-Pol OMNI Cantenna | Hex-Port | 2 ft | 360°

Mechanical specifications		
Dimensions height/diameter, inches (mm)	27.5/14 (698.5/355)	
No. of RF input ports, connector type and location	6 x 4.3-10 female, bottom	
RF connector torque	96 lbf·in (10.85 N m or 8 lbf·ft)	
Net antenna weight, lbs. (kg)	38.6 (17.5)	
Rated wind survival speed, mph (km/h)	150 (241)	
Frontal wind loading @ 160 km/h, lbf (N)	47.6 (211.5)	
Equivalent flat plate @100 mph and Cd=2, sq. ft	0.96	

Front view



End view



Ordering information	
Antenna model	Description
CX06OMI236-1C	2F X-Pol HEX OMNI 360° LB 2° FET, HB 2-8° RET, 4.3-10

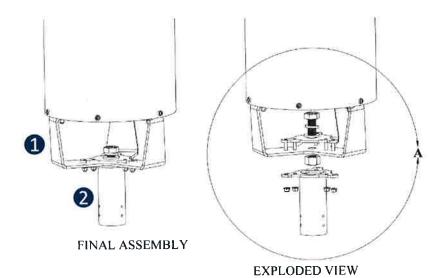


NWAV™ X-Pol OMNI Cantenna | Hex-Port | 2 ft | 360°

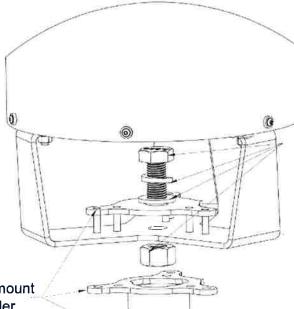
Notes on cylinder brackets:

- All CX* antennas come with the bottom mount bracket (marked as 1) factory installed (all factory testing is done with bracket attached)
- Hardware is included with each antenna to connect bottom bracket to different mounting systems
- JMA cylinder brackets are compatible with bottom mount via universal cantenna mount sleeve (marked as 2) included with JMA cylinder mounting systems.

Example bracket configuration



Mounting details



Included with antenna:

7/8" bolt, washer, nut (Torque to 202 lbf·ft)

Sold separately:
Universal cantenna mount
sleeve for JMA cylinder

brackets (SC-BKT-SLA)

Small Cell solutions and mounting systems	
Side Arm Mounting System	SC-BKT-SA-(color)
Steel Pole Mounting System	SC-BKT-SLA-(color)
Wide Diameter Pole	SC-BKT-WTPE-(color)
Rooftop Ballasted Mounting System	SC-BKT-RTB-(color)

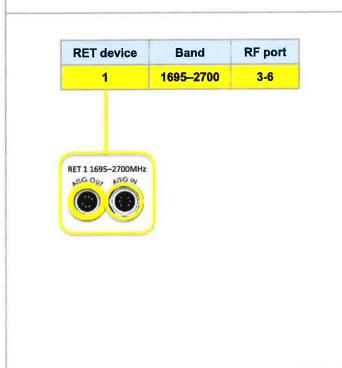


NWAV™ X-Pol OMNI Cantenna | Hex-Port | 2 ft | 360°

Remote Electrical Tilt (RET 1000) information		
RET location	Integrated into antenna	
RET interface connector type	8-pin AISG connector per IEC 60130-9	
RET interface connector quantity	2 pairs of AISG male/female connectors	
RET interface connector location	Bottom of the antenna	
Total No. of internal RETs high bands	1	
RET input operating voltage, vdc	10-30	
RET max power consumption, idle state, W	≤ 2.0	
RET max power consumption, normal operating conditions, W	≤ 13.0	
RET communication protocol	AISG 2.0/ 3GPP	

RET topology

A single RET device controls all 3 sectors via the designated external AISG connector as shown below

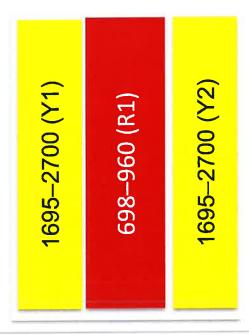


Array topology

3 sets of radiating arrays

R1: 698–960 MHz Y1: 1695–2700 MHz Y2: 1695–2700 MHz

Band	RF Port
1695–2700	3–4
698–960	1–2
1695–2700	5–6



ALCATEL-LUCENT B66A RRH4X45

The Alcatel-Lucent B66a Remote Radio Head 4x45 is the newest addition of Remote Radio Head to the extended product line of Alcatel-Lucent's distributed Base Station solutions, aimed at facilitating smooth RF site acquisition and related civil engineering. Its operational range covers beyond that of B4 (AWS) and B10 (AWS+).

Supporting 2Tx/4Tx MIMO and 2-way/4-way Rx diversity, the Alcatel-Lucent B66a RRH4x45 allows operators to have a compact radio solution to deploy LTE in the 2100 band (3GPP band 4, 10, and 66), providing them with the means to achieve high capacity, high quality, high reliability, large instantaneous bandwidth, and high coverage with minimum site requirements.

The Alcatel-Lucent B66a RRH4x45 product has four transmit RF paths, offering the possibility to **select, via software only, 2Tx or 4Tx MIMO configurations** with either 2x90W or 4x45W RF output power. It also supports 4-way Rx diversity at the 70 MHz instantaneous bandwidth.

The Alcatel-Lucent B66a RRH4x45 is a compact (near zero-footprint) solution and operates noise free, simplifying negotiations with site property owners and minimizing environmental impacts.

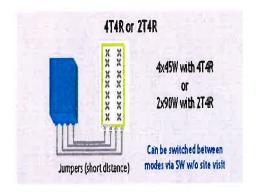
Its compactness and slim design makes the Alcatel-Lucent B66a RRH4x45 easy to install close to the antenna: operators can therefore locate this Remote Radio Head where RF design conditions are deemed ideal, minimizing trade-offs between available sites and RF optimum sites, together with reducing the RF feeder needs and installation costs.

FEATURES

- Supporting LTE in 2110 2180 MHz band/DL, 1710-1780MHz/UL (3GPP band 4, 10, and 66a)
- LTE 2Tx or 4Tx MIMO (SW selectable)
- Configuration: 2T2R/2T4R/4T4R
- Output power: Up to 2x90W or 4x45W (SW configurable)
- 70MHz LTE carrier with 4Rx Diversity
- Convection-cooled (fan-less)
- Supports AISG 2.0 ALD devices (RET, TMA) through RS485 or RF ports

PARKET S

- Compact to reduce additional footprint when adding LTE in AWS 1-3 band
- Selection of MIMO configuration (2Tx or 4Tx) by software only
- Improves downlink spectral efficiency through 4Tx MIMO
- Increases LTE coverage thanks to 4Rx diversity capability and best in class Rx sensitivity
- · Flexible mounting options: Pole or Wall





Features & Performance		
Number of TX/RX paths	4 duplexed (either 4T4R or 2T4R selectable by SW)	
Frequency band	AW5 1-3, B4/B66a DL: 2110-2180 MHz / UL: 1710-1780 MHz	
Instantaneous bandwidth - #carriers	70 MHz - 4 LTE MIMO carriers (in 70 MHz occupied bandwidth)	
LTE carrier bandwidth	5, 10, 15, 20 MHz	
RF output power	2x90W or 4x45W (selectable by SW)	
Noise figure - RX Diversity scheme Receives Sensivity (FRC A1-3)	2 dB typical (<2.5 dB max) – 2 or 4 way Rx diversity -104.5 dBm maximum	
Sizes (HxWxD) in mor (in:) Volume in Liters	655x299x182 (25.8x11.8x7.2) (with solar shield) 640x290x160 (25.2x11.4x6.3) (without solar shield) 35.5 (with solar shield) 29.7 (without solar shield)	
Weight in kg (lb) (w/o mounting HW)	25.8kg (56.8lb) (with solar shield)	
DC voitage range	Nominal: -48V, -40.5 to -57V at full performance, -38 to -57V with relaxation on power consumption	
BC power consumption	750W typical @100% RF load (in 2Tx or 4Tx mode); Add 58W for 2A*29V for AISG	
Environmental conditions Wind load (\$150km/hor 93mph)	-40°C (-40°F) /+55°C (+131°F) UL50E Type 4 Enclosure 250N (56lb) Frontal/150N (34lb) Lateral	
Antenna porte	4 ports 4.3-10 female (50 ohms) VSWR < 1.5	
CPRI ports	2 CPRI ports (HW ready for Rate 7, 9.8 Gbps) SFP: SMDF (HW supports also SMSF and MMDF)	
AISG Interfaces	1 AISG 2.0 output (RS485) Integrated Smart Bias Tees (x2)	
Misc. Interfoces	4 external alarms (1 connector) 1 DC connector (2 pins)	
Installation conditions	Pole and wall mounting	
Regulatory compliance	3GPP 36.141 / 3GPP 36.113 / GR-487 / GR-1089-CORE / GR-3108-CORE / UL 60950-1 / FCC Part 27 / FCC Part 15 / GR-3178-CORE	

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ATTACHMENT 4



ATTACHMENT 5

Robinson - Cole

KENNETH C. BALDWIN

280 Trumbull Street Hartford, CT 06103-3597 Main (860) 275-8200 Fax (860) 275-8299 kbaldwin@rc.com Direct (860) 275-8345

Also admitted in Massachusetts

December 4, 2018

Via Certificate of Mailing

Jayme Stevenson, First Selectman Town of Darien 2 Renshaw Road Darien, CT 06820

Re: Proposed Installation of a Wireless Telecommunications Facility Goodwives River Road Right of Way, Darien, Connecticut

Dear Ms. Stevenson:

This firm represents Cellco Partnership d/b/a Verizon Wireless ("Cellco"). Today, Cellco filed a Petition for Declaratory Ruling ("Petition") with the Connecticut Siting Council ("Council") seeking approval to establish a new small cell telecommunications facility in the public right of way off Goodwives River Road, near property at 53 Goodwives River Road, Darien, Connecticut (the "Property"). The facility will consist of a small wood tower, supporting a single canister antenna and related equipment. The top of the antennas would extend to a height of 37.4' above grade. Equipment including a remote radio head and power supply cabinet associated with the small cell antenna will be attached to the lower portion of the pole.

A full copy of the Petition is attached for your review. In accordance with Council requirements, abutting landowners were also sent notice of this filing and a copy of the Petition.

18713901-v1

Robinson Cole

Jayme Stevenson, First Selectman December 4, 2018 Page 2

Please contact me if you have any questions regarding this proposal.

Sincerely,

Kenneth C. Baldwin

Attachment

Robinson+Cole

KENNETH C. BALDWIN

280 Trumbull Street Hartford, CT 06103-3597 Main (860) 275-8200 Fax (860) 275-8299 kbaldwin@rc.com Direct (860) 275-8345

Also admitted in Massachusetts

December 4, 2018

Via Certificate of Mailing

Jeremy Ginsberg, Planning & Zoning Director Town of Darien 2 Renshaw Road Darien, CT 06820

Re: Proposed Installation of a Wireless Telecommunications Facility Goodwives River Road Right of Way, Darien, Connecticut

Dear Mr. Ginsberg:

This firm represents Cellco Partnership d/b/a Verizon Wireless ("Cellco"). Today, Cellco filed a Petition for Declaratory Ruling ("Petition") with the Connecticut Siting Council ("Council") seeking approval to establish a new small cell telecommunications facility in the public right of way off Goodwives River Road, near property at 53 Goodwives River Road, Darien, Connecticut (the "Property"). The facility will consist of a small wood tower, supporting a single canister antenna and related equipment. The top of the antennas would extend to a height of 37.4' above grade. Equipment including a remote radio head and power supply cabinet associated with the small cell antenna will be attached to the lower portion of the pole.

A full copy of the Petition is attached for your review. In accordance with Council requirements, abutting landowners were also sent notice of this filing and a copy of the Petition.

18713906-v1

Robinson + Cole

Jeremy Ginsberg, Planning & Zoning Director December 4, 2018 Page 2

Please contact me if you have any questions regarding this proposal.

Sincerely,

Kenneth C. Baldwin

Attachment

KENNETH C. BALDWIN

280 Trumbull Street Hartford, CT 06103-3597 Main (860) 275-8200 Fax (860) 275-8299 kbaldwin@rc.com Direct (860) 275-8345

Also admitted in Massachusetts

December 4, 2018

Via Certificate of Mailing

«Name_and_Address»

Re: Proposed Installation of a Wireless Telecommunications Facility Goodwives River Road Right of Way, Darien, Connecticut

Dear «Salutation»:

This firm represents Cellco Partnership d/b/a Verizon Wireless ("Cellco"). Today, Cellco filed a Petition for Declaratory Ruling ("Petition") with the Connecticut Siting Council ("Council") seeking approval to establish a new small cell telecommunications facility in the public right of way off Goodwives River Road, near property at 53 Goodwives River Road, Darien, Connecticut (the "Property"). The facility will consist of a small wood tower, supporting a single canister antenna and related equipment. The top of the antennas would extend to a height of 37.4' above grade. Equipment including a remote radio head and power supply cabinet associated with the small cell antenna will be attached to the lower portion of the pole. A copy of Cellco's Petition is attached for your review.

This notice is being sent to you because you are listed on the Town Assessor's records as an owner of land that abuts the Property. If you have any questions regarding the Petition, the Council's process for reviewing the Petition or the details of the filing itself, please feel free to contact me at the number listed above. You may also contact the Council directly at 860-827-2935.

December 4, 2018 Page 2

Sincerely,

Kenneth C. Baldwin

Attachment

CELLCO PARTNERSHIP D/B/A VERIZON WIRELESS

ABUTTING PROPERTY OWNERS

GOODWIVES RIVER ROAD RIGHT OF WAY DARIEN, CONNECTICUT

	Property Address	Owner's and Mailing Address
1,,,	53 Goodwives River Road	Bradley and Rachel Gillin 53 Goodwives River Road Darien, CT 06820
2.	48 Goodwives River Road	James S. and Andrea L. Bonfils 48 Goodwives River Road Darien, CT 06820