

August 25, 2015

Melanie A. Bachman
Acting Executive Director
Connecticut Siting Council
10 Franklin Square
New Britain, CT 06051

Re: **Notice of Exempt Modification – Facility Modification
600 Asylum Avenue, Hartford, Connecticut**

Dear Ms. Bachman:

Cellco Partnership d/b/a Verizon Wireless (“Cellco”) currently maintains twenty (20) antennas on the roof of the building at 600 Asylum Avenue in Hartford, Connecticut (the “Property”). The building is owned by MATP LLC. The Council approved Cellco’s roof-top telecommunications facility in Petition No. 325 on August 9, 1994, and maintains jurisdiction over this facility. Cellco now intends to replace six (6) of its existing antennas with three (3) model SBNHH-1D65B, 1900 MHz antennas and three (3) model SBNHH-1D65B, 2100 MHz antennas, all at the same level on the roof. Cellco also intends to replace three (3) existing remote radio heads (“RRHs”) with three (3) newer model RRHs and install three (3) new RRHs and two (2) HYBRIFLEX™ fiber optic antenna cables. Included in Attachment 1 are specifications for Cellco’s replacement antennas, RRHs and HYBRIFLEX™ cables.

Please accept this letter as notification pursuant to R.C.S.A. § 16-50j-73, for construction that constitutes an exempt modification pursuant to R.C.S.A. § 16-50j-72(b)(2). In accordance with R.C.S.A. § 16-50j-73, a copy of this letter is being sent to Pedro E. Segarra, Mayor for the City of Hartford. A copy of this letter is also being sent to MATP LLC, the owner of the Property.

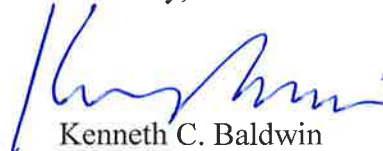
The planned modifications to the facility fall squarely within those activities explicitly provided for in R.C.S.A. § 16-50j-72(b)(2).

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1. The proposed modifications will not result in an increase in the height of the existing structure. Cellco's replacement antennas and RRHs will all be located at the same heights on the building.
2. The proposed modifications will not involve any change to ground-mounted equipment and, therefore, will not require the extension of the site boundary.
3. The proposed modifications will not increase noise levels at the facility by six decibels or more, or to levels that exceed state and local criteria.
4. The operation of the replacement antennas will not increase radio frequency (RF) emissions at the facility to a level at or above the Federal Communications Commission (FCC) safety standard. A General Power Density table for Cellco's modified facility is included in Attachment 2.
5. The proposed modifications will not cause a change or alteration in the physical or environmental characteristics of the site.
6. The building can support Cellco's proposed modifications. (See Structural Evaluation Letter included in Attachment 3).

For the foregoing reasons, Cellco respectfully submits that the proposed modifications to the above-referenced telecommunications facility constitutes an exempt modification under R.C.S.A. § 16-50j-72(b)(2).

Sincerely,



Kenneth C. Baldwin

Enclosures

Copy to:

Pedro E. Segarra, Hartford Mayor
MATP LLC
Tim Parks

ATTACHMENT 1



SBNHH-1D65B

Andrew® Tri-band Antenna, 698–896 and 2x 1695–2360 MHz, 65° horizontal beamwidth, internal RET. Both high bands share the same electrical tilt.

- Interleaved dipole technology providing for attractive, low wind load mechanical package



Electrical Specifications

Frequency Band, MHz	698–806	806–896	1695–1880	1850–1990	1920–2180	2300–2360
Gain, dBi	14.9	14.7	17.7	18.2	18.6	18.6
Beamwidth, Horizontal, degrees	68	66	69	66	63	58
Beamwidth, Vertical, degrees	12.1	10.7	5.6	5.2	5.0	4.5
Beam Tilt, degrees	0–14	0–14	0–7	0–7	0–7	0–7
USLS, dB	14	13	15	15	15	13
Front-to-Back Ratio at 180°, dB	27	29	28	28	28	27
CPR at Boresight, dB	20	23	20	20	17	21
CPR at Sector, dB	14	10	12	10	9	1
Isolation, dB	25	25	25	25	25	25
Isolation, Intersystem, dB	30	30	30	30	30	30
VSWR Return Loss, dB	1.5 14.0	1.5 14.0	1.5 14.0	1.5 14.0	1.5 14.0	1.5 14.0
PIM, 3rd Order, 2 x 20 W, dBc	-153	-153	-153	-153	-153	-153
Input Power per Port, maximum, watts	350	350	350	350	350	300
Polarization	±45°	±45°	±45°	±45°	±45°	±45°
Impedance	50 ohm	50 ohm	50 ohm	50 ohm	50 ohm	50 ohm

Electrical Specifications, BASTA*

Frequency Band, MHz	698–806	806–896	1695–1880	1850–1990	1920–2180	2300–2360
Gain by all Beam Tilts, average, dBi	14.5	14.3	17.4	17.9	18.2	18.3
Gain by all Beam Tilts Tolerance, dB	±0.5	±0.8	±0.4	±0.3	±0.5	±0.3
Gain by Beam Tilt, average, dBi	0° 14.6	0° 14.5	0° 17.4	0° 17.8	0° 18.1	0° 18.2
	7° 14.6	7° 14.4	3° 17.5	3° 17.9	3° 18.3	3° 18.4
	14° 14.2	14° 13.6	7° 17.4	7° 17.9	7° 18.2	7° 18.4
Beamwidth, Horizontal Tolerance, degrees	±2.2	±3.4	±2	±4.6	±5.7	±4.3
Beamwidth, Vertical Tolerance, degrees	±0.8	±1	±0.3	±0.2	±0.3	±0.2
USLS, dB	16	14	16	16	16	15
Front-to-Back Total Power at 180° ± 30°, dB	25	26	27	26	26	26
CPR at Boresight, dB	22	23	21	20	20	22
CPR at Sector, dB	13	11	16	12	11	4

* CommScope® supports NGMN recommendations on Base Station Antenna Standards (BASTA). To learn more about the benefits of BASTA, [download the whitepaper Time to Raise the Bar on BSAs.](#)

General Specifications

Antenna Brand	Andrew®
Antenna Type	DualPol® multiband with internal RET
Band	Multiband
Brand	DualPol® Teletilt®
Operating Frequency Band	1695 – 2360 MHz 698 – 896 MHz
Performance Note	Outdoor usage

Product Specifications

COMMScope®

SBNHH-1D65B



Mechanical Specifications

Color	Light gray
Lightning Protection	dc Ground
Radiator Material	Aluminum Low loss circuit board
Radome Material	Fiberglass, UV resistant
Reflector Material	Aluminum
RF Connector Interface	7-16 DIN Female
RF Connector Location	Bottom
RF Connector Quantity, total	6
Wind Loading, maximum	617.7 N @ 150 km/h 138.9 lbf @ 150 km/h
Wind Speed, maximum	241.4 km/h 150.0 mph

Dimensions

Depth	181.0 mm 7.1 in
Length	1851.0 mm 72.9 in
Width	301.0 mm 11.9 in
Net Weight	18.4 kg 40.6 lb

Remote Electrical Tilt (RET) Information

Input Voltage	10–30 Vdc
Power Consumption, idle state, maximum	2.0 W
Power Consumption, normal conditions, maximum	13.0 W
Protocol	3GPP/AISG 2.0 (Multi-RET)
RET Interface	8-pin DIN Female 8-pin DIN Male
RET Interface, quantity	1 female 1 male
RET System	Teletilt®

Regulatory Compliance/Certifications

Agency	Classification
RoHS 2011/65/EU	Compliant by Exemption
China RoHS SJ/T 11364-2006	Above Maximum Concentration Value (MCV)
ISO 9001:2008	Designed, manufactured and/or distributed under this quality management system



Included Products

BSAMNT-1 — Wide Profile Antenna Downtilt Mounting Kit for 2.4 - 4.5 in (60 - 115 mm) OD round members. Kit contains one scissor top bracket set and one bottom bracket set.

* Footnotes

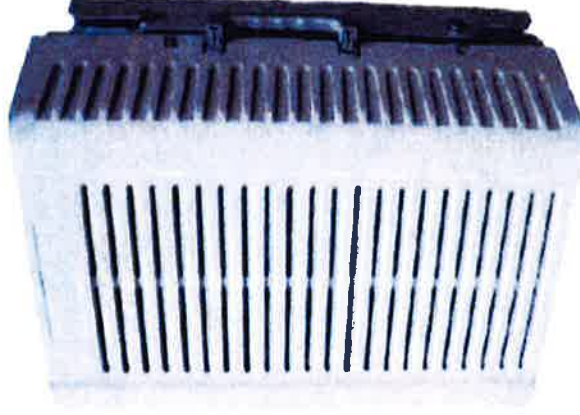
Performance Note Severe environmental conditions may degrade optimum performance

PCS RF MODULES

RRH1900 2X60 - HW CHARACTERISTICS

LA6.0.1/13.3

RRH2x60	
RF Output Power	2x60W
Instantaneous Bandwidth	20MHz
Transmitter	2 TX
Receiver	2 Branch RX – LA6.0.1 4 Branch RX – LR13.3
Features	AISG 2.0 for RET/TMA Internal Smart Bias-T
Power	-48VDC
CPRI Ports	2 CPRI Rate 3 Ports
External Alarms	4 External User Alarms
Monitor Ports	TX
Environmental	GR487 Compliance
RF Connectors	7/16 DIN (top mounted)



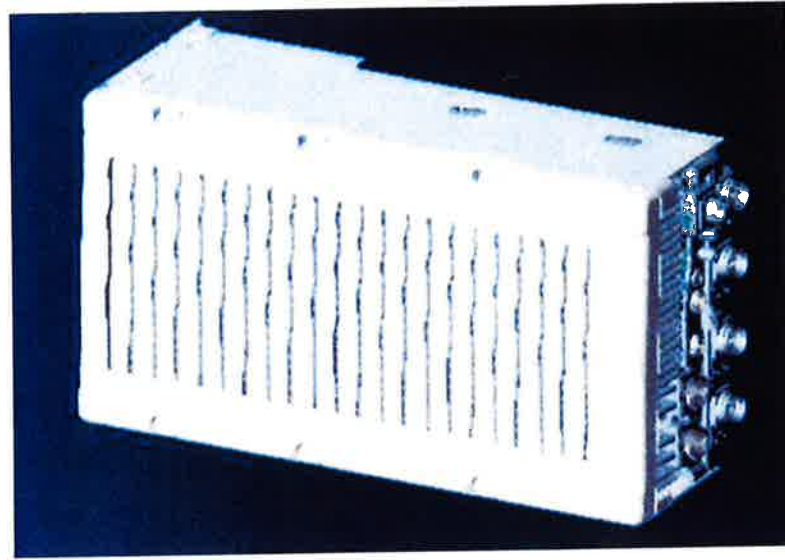
** Not a Verizon Wireless deployed product

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NEW PCS RF MODULES FOR VZW RRH2X60 - HW CHARACTERISTICS

LR14.3

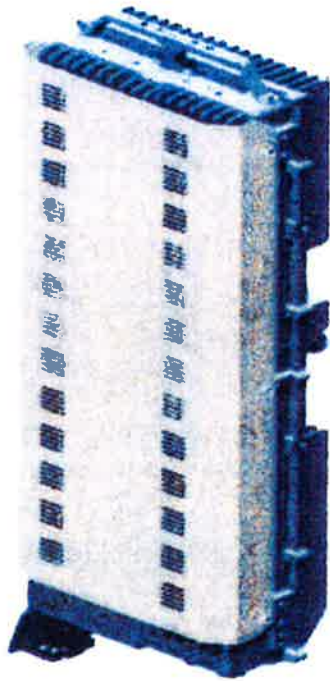
RRH2X60	
RF Output Power	2x60W (4x30W HW Ready)
Instantaneous Bandwidth	60MHz
Target Reliability (Annual Return Rate)	<2%
Receiver	4 Branch Rx
Features	AISG 2.0 for RET/TMA
Power	-48VDC Internal Smart Bias-T
CPRI Ports	2 CPRI Rate 5 Ports
External Alarms	4 External User Alarms
Monitor Ports	TX, RX
Environmental	GR487 Compliance
RF Connectors	7/16 DIN (downward facing)
Dimensions	22"(h) x 12"(w) x 9.4" (d)**
Weight	55lb**



** - Includes solar shield but not mounting brackets (8 lbs.)



The Alcatel-Lucent RRH2x60-AWS is a high power, small form factor Remote Radio Head operating in the AWS frequency band (3GPP Band 4) for LTE technology. It is designed with an eco-efficient approach, providing operators with the means to achieve high quality and high capacity coverage with minimum site requirements and efficient operation.



A distributed Node B expands the deployment options by using two components, a Base Band Unit (BBU) containing the digital assets and a separate RRH containing the radio-frequency (RF) elements. This modular design optimizes available space and allows the main components of a Node B to be installed separately, within the same site or several kilometers apart. The Alcatel-Lucent RRH2x60-AWS is linked to the BBU by an optical-fiber connection carrying downlink and uplink digital radio signals

along with operations, administration and maintenance (OA&M) information.

The Alcatel-Lucent RRH2x60-AWS integrates all the latest technologies. This allows to offer best-in-class characteristics.

It delivers an outstanding 120 watts of total RF power thanks to its two transmit RF paths of 60 W each.

It is ideally suited to support multiple-input multiple-output (MIMO) 2x2 operation.

It includes four RF receivers to natively support 4-way uplink reception diversity. This improves the radio uplink coverage and this can be used to extend the cell radius commensurate with 2x2MIMO 2x60 W for the downlink.

It supports multiple discontinuous LTE carriers within an instantaneous bandwidth of 45 MHz corresponding to the entire AWS B4 spectrum.

The latest generation power amplifiers (PA) used in this product achieve high efficiency (>40%), resulting in improved power consumption figures.

The Alcatel-Lucent RRH2x60-AWS is designed to make available all the benefits of a distributed Node B, with excellent RF characteristics, with low capital expenditures (CAPEX) and low operating expenditures (OPEX).

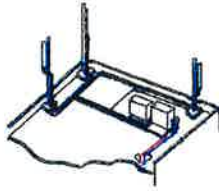
The Alcatel-Lucent RRH2x60-AWS is a very cost-effective solution to deploy LTE MIMO.

The RRH2x60-AWS includes a reversible mounting bracket which allows for ease of installation behind an antenna, or on a rooftop knee wall while providing easy access to the mid body RF connectors.

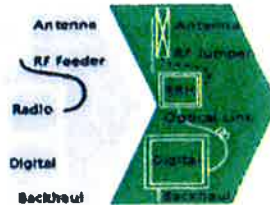
The limited space available in some sites may prevent the installation of traditional single-cabinet BTS equipment. However, many of these sites can host an Alcatel-Lucent RRH2x60-AWS installation, providing more flexible site selection and improved network quality along with greatly reduced installation time and costs.

The Alcatel-Lucent RRH2x60-AWS is a zero-footprint solution and is convection cooled without fans for silent operation, simplifying negotiations with site property owners and minimizing environmental impacts.

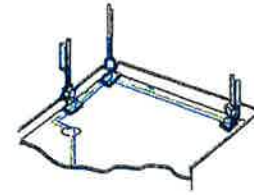
Installation can easily be done by a single person as the Alcatel-Lucent RRH2x60-AWS is compact and weighs about 20 kg, eliminating the need for a crane to hoist the BTS cabinet to the rooftop. A site can be in operation in less than one day.



Macro



RRH for space-constrained cell sites



Distributed

- RRH2x60-AWS integrates two power amplifiers of 60W rating (at each antenna connector)
- Support multiple carriers over the entire 3GPP band 4
- RRH2x60-AWS is optimized for LTE operation
- RRH2x60-AWS is a very compact and lightweight product
- Advanced power management techniques are embedded to provide power savings, such as PA bias control

- MIMO LTE operation with only one single unit per sector
- Improved uplink coverage with built-in 4-way receive diversity capability
- RRH can be mounted close to the antenna, eliminating nearly all losses in RF cables and thus reducing power consumption by 50% compared to conventional solutions
- Distributed configurations provide easily deployable and cost-effective solutions, near zero footprint and

- silent solutions, with minimum impact on the neighborhood, which ease the deployment
- RETA and TMA support without additional hardware thanks to the AISG v2.0 port and the integrated Bias-Tees. Bias-Tees support AISG DC supply and signaling.

Specifications listed are hardware capabilities. Some capabilities depend on support in a specific software release or future release.

Dimensions and weights

- HxWxD : 510x285x186mm (27 l with solar shield)
- Weight : 20 kg (44 lbs)

Electrical Data

- Power Supply : -48V DC (-40.5 to -57V)
- Power Consumption (ETSI average traffic load reference) : 250W @2x60W

RF Characteristics

- Frequency band: 1710-1755, UL / 2110-2155 MHz, DL (3GPP band 4)
- Output power: 2x60W at antenna connectors
- Technology supported: LTE
- Instantaneous bandwidth: 45 MHz
- Rx diversity: 2-way and 4-way uplink reception
- Typical sensitivity without Rx diversity: -105 dBm for LTE

Connectivity

- Two CPRI optical ports for daisy chaining and up to six RRHs per fiber
- Type of optical fiber: Single-Mode (SM) and Multi-Mode (MM) SFPs
- Optical fiber length: up to 500m using MM fiber, up to 20km using SM fiber
- TMA/RETA : AISG 2.0 (RS485 connector and internal Bias-Tee)
- Six external alarms
- Surge protection for all external ports (DC and RF)

Environmental specifications

- Operating temperature: -40°C to 55°C including solar load
- Operating relative humidity: 8% to 100%
- Environmental Conditions : ETS 300 019-1-4 class 4.1E
- Ingress Protection : IEC 60529 IP65
- Acoustic Noise : Noiseless (natural convection cooling)

Safety and Regulatory Data

- EMC : 3GPP 25113, EN 301 489-1, EN 301 489-23, GR 1089, GR 3108, OET-65
- Safety : IEC60950-1, EN 60825-1, UL, ANSI/NFPA 70, CAN/CSA-C22.2
- Regulatory : FCC Part 15 Class B, CE Mark – European Directive : 2002/95/EC (ROHS); 2002/96/EC (WEEE); 1999/5/EC (R&TTE)
- Health : EN 50385

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AT THE SPEED OF IDEAS™

Alcatel-Lucent 



HYBRIFLEX™ RRH Hybrid Feeder Cabling Solution, 1-5/8", Single-Mode Fiber

Product Description

RFS' HYBRIFLEX Remote Radio Head (RRH) hybrid feeder cabling solution combines optical fiber and DC power for RRHs in a single lightweight aluminum corrugated cable, making it the world's most innovative solution for RRH deployments.

It was developed to reduce installation complexity and costs at Cellular sites. HYBRIFLEX allows mobile operators deploying an RRH architecture to standardize the RRH installation process and eliminate the need for and cost of cable grounding. HYBRIFLEX combines optical fiber (multi-mode or single-mode) and power in a single corrugated cable. It eliminates the need for junction boxes and can connect multiple RRHs with a single feeder. Standard RFS CELLFLEX® accessories can be used with HYBRIFLEX cable. Both pre-connectorized and on-site options are available.

Features/Benefits

- Aluminum corrugated armor with outstanding bending characteristics - minimizes installation time and enables mechanical protection and shielding
- Same accessories as 1 5/8" coaxial cable
- Outer conductor grounding - Eliminates typical grounding requirements and saves on installation costs
- Lightweight solution and compact design - Decreases tower loading
- Robust cabling - Eliminates need for expensive cable trays and ducts
- Installation of tight bundled fiber optic cable pairs directly to the RRH - Reduces CAPEX and wind load by eliminating need for interconnection
- Optical fiber and power cables housed in single corrugated cable - Saves CAPEX by standardizing RRH cable installation and reducing installation requirements
- Outdoor polyethylene jacket - Ensures long-lasting cable protection



Figure 1: HYBRIFLEX Series

Technical Specifications

Outer Conductor Armor	Corrugated Aluminum	[mm (in)]	46.5 (1.83)
Jacket	Polyethylene, PE	[mm (in)]	50.3 (1.98)
UV-Protection	Individual and External Jacket		Yes
Weight and Bending			
Weight, Approximate		[kg/m (lb/ft)]	1.9 (1.30)
Minimum Bending Radius, Single Bending		[mm (in)]	200 (8)
Minimum Bending Radius, Repeated Bending		[mm (in)]	500 (20)
Recommended/Maximum Clamp Spacing		[m (ft)]	1.0 / 1.2 (3.25 / 4.0)
Electrical Properties			
DC-Resistance Outer Conductor Armor		[Ω/km (Ω/1000ft)]	0.68 (0.205)
DC-Resistance Power Cable, 8 4mm ² (8AWG)		[Ω/km (Ω/1000ft)]	2.1 (0.307)
Optical Properties			
Version			Single-mode OM3
Quantity, Fiber Count			16 (8 pairs)
Core/Clad		[μm]	50/125
Primary Coating (Acrylate)		[μm]	245
Buffer Diameter, Nominal		[μm]	900
Secondary Protection, Jacket, Nominal		[mm (in)]	2.0 (0.08)
Minimum Bending Radius		[mm (in)]	104 (4.1)
Insertion Loss @ wavelength 850nm		dB/km	3.0
Insertion Loss @ wavelength 1310nm		dB/km	1.0
Standards (Meets or exceeds)			UL94-V0, UL1666 RoHS Compliant
Power Cable Properties			
Size (Power)		[mm (AWG)]	8.4 (8)
Quantity, Wire Count (Power)			16 (8 pairs)
Size (Alarm)		[mm (AWG)]	0.8 (18)
Quantity, Wire Count (Alarm)			4 (2 pairs)
Type			UV protected
Strands			19
Primary Jacket Diameter, Nominal		[mm (in)]	6.8 (0.27)
Standards (Meets or exceeds)			NFPA 130, ICEA S-95-658 UL Type XHHW-2, UL 44 UL-LS Limited Smoke, UL VW-1 IEEE-383 (1974), IEEE1202/FT4 RoHS Compliant
Temperature			
Installation Temperature		[°C (°F)]	-40 to +65 (-40 to 149)
Operation Temperature		[°C (°F)]	-40 to +65 (-40 to 149)

* This data is provisional and subject to change

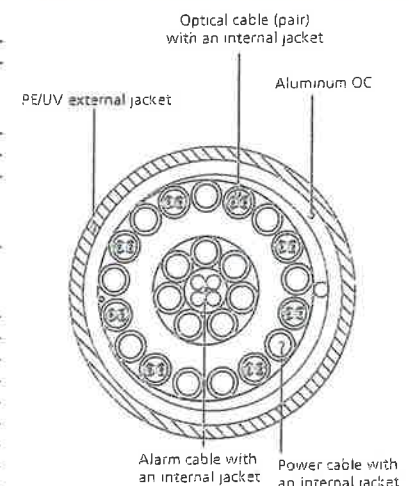


Figure 2: Construction Detail

All information contained in the present datasheet is subject to confirmation at time of ordering.

ATTACHMENT 2

General Power Density

Site Name: Hartford West CT
 Cumulative Power Density

Operator	Operating Frequency (MHz)	Number of Trans.	ERP Per Trans. (watts)	Total ERP (watts)	Distance to Target (feet)	Calculated Power Density (mW/cm ²)	Maximum Permissible Exposure* (mW/cm ²)	Fraction of MPE (%)
VZW PCS	1970	5	449	2243.314	99.1	0.0821	1.0	8.21%
VZW Cellular	869	7	409	2865.88	99.1	0.1049	0.5793333333	18.11%
VZW AWS	2145	1	3500	3500	99.1	0.1282	1.0	12.82%
VZW 700	746	1	2100	2100	99.1	0.0769	0.4973333333	15.46%

Total Percentage of Maximum Permissible Exposure

54.61%

*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/cm² = milliwatts per square centimeter

ERP = Effective Radiated Power

Absolute worst case maximum values used.

ATTACHMENT 3

July 13, 2015

Mr. Aleksey Tyurin
Verizon Wireless
99 East River Drive
East Hartford, CT 06108

*Re: Structural Evaluation Letter ~ Antenna Upgrade
Verizon Wireless Site Ref ~ Hartford West
600 Asylum Avenue
Hartford, CT 06105*

Centek Project No. 15001.059

Dear Mr. Tyurin,

Centek Engineering, Inc. has reviewed the proposed Verizon Wireless antenna upgrade at the above referenced site. The purpose of the review is to determine the structural adequacy of the existing 110-ft +/- tall host building to support the proposed modified antenna configuration. The existing antenna installation consists of four (4) antenna sectors, pipe mounted to four (4) existing penthouse structures on the host building. The review considered the effects of wind load, dead load, ice load and seismic forces in accordance with the 2005 Connecticut State Building Code as amended by the 2009 Connecticut State Supplement.

The existing, proposed, and future Verizon Wireless loads considered in this analysis consist of the following:

- Verizon (Existing to Remain – Alpha 1 Sector):
Antennas: Two (2) Antel LPA-80040-4CF and two (2) Antel LPA-185040-8CF panel antennas pipe mounted to one (1) building penthouse with a RAD center elevation of 99-ft +/- AGL.
Cables: Six (6) 1-5/8-in dia coaxial cables routed within the existing cable tray.
- Verizon (Existing to Remain – Alpha 2 Sector):
Antennas: Two (2) Antel LPA-80040-4CF and one (1) CSS X7C-FRO-660 panel antenna pipe mounted to one (1) building penthouse with a RAD center elevation of 108-ft +/- AGL.
Misc Equipment: One (1) Alcatel-Lucent RRH2x40-700 Remote Radio Head and one (1) Raycap sector distribution box located on a roof mounted ballast frame.
Cables: Six (6) 1-5/8-in dia coaxial cables and one (1) 1-1/4" dia. fiber cable routed within the existing cable tray.
- Verizon (Existing to Remove – Alpha 2 Sector):
Antennas: One (1) Antel BXA-171063-8BF and one (1) Antel BXA-185040-8CF panel antennas pipe mounted to one (1) building penthouse with a RAD center elevation of 108-ft +/- AGL.
Misc Equipment: One (1) Alcatel-Lucent RRH2x40-AWS Remote Radio Head located on a roof mounted ballast frame.
- Verizon (Proposed– Alpha 2 Sector):
Antennas: Two (2) Andrew SBNHH-1D65B panel antennas pipe mounted to one (1) building penthouse with a RAD center elevation of 108-ft +/- AGL.
Misc Equipment: One (1) Alcatel-Lucent RRH2x60-AWS and one (1) Alcatel-Lucent RRH2x60-PCS Remote Radio Heads located on a roof mounted ballast frame.
Cables: One (1) 1-1/4-in dia. Hybriflex Fiber jumper cables routed within the existing cable tray from the main distribution box to the sector distribution box.

- **Verizon (Existing to Remain – Beta Sector):**
Antennas: Two (2) Decibel DB844G64ZAXY and one (1) CSS X7C-FRO-660 panel antenna pipe mounted to one (1) building penthouse with a RAD center elevation of 99-ft +/- AGL.
Misc Equipment: One (1) Alcatel-Lucent RRH2x40-700 Remote Radio Head and one (1) Raycap sector distribution box mounted to the façade of one (1) building penthouse.
Cables: Six (6) 1-5/8-in dia coaxial cables and one (1) 1-1/4" dia. fiber cable routed within the existing cable tray.
- **Verizon (Existing to Remove – Beta Sector):**
Antennas: One (1) Antel BXA-171063-8BF and one (1) Antel BXA-185063-8CF panel antennas pipe mounted to one (1) building penthouse with a RAD center elevation of 99-ft +/- AGL.
Misc Equipment: One (1) Alcatel-Lucent RRH2x40-AWS Remote Radio Head mounted to the façade of one (1) building penthouse.
- **Verizon (Proposed– Beta Sector):**
Antennas: Two (2) Andrew SBNHH-1D65B panel antennas pipe mounted to one (1) building penthouse with a RAD center elevation of 99-ft +/- AGL.
Misc Equipment: One (1) Alcatel-Lucent RRH2x60-AWS and one (1) Alcatel-Lucent RRH2x60-PCS Remote Radio Heads mounted to the façade of one (1) building penthouse.
Cables: One (1) 1-1/4-in dia. Hybriflex Fiber jumper cables routed within the existing cable tray from the main distribution box to the sector distribution box.
- **Verizon (Existing to Remain – Gamma Sector):**
Antennas: Two (2) Antel LPA-80040-4CF and one (1) CSS X7C-FRO-660 panel antenna pipe mounted to one (1) building penthouse with a RAD center elevation of 99-ft +/- AGL.
Misc Equipment: One (1) Alcatel-Lucent RRH2x40-700 Remote Radio Head and one (1) Raycap sector distribution box mounted to the façade of one (1) building penthouse.
Cables: Six (6) 1-5/8-in dia coaxial cables and one (1) 1-1/4" dia. fiber cable routed within the existing cable tray.
- **Verizon (Existing to Remove – Gamma Sector):**
Antennas: One (1) Antel BXA-171063-8BF and one (1) Antel BXA-185040-8CF panel antennas pipe mounted to one (1) building penthouse with a RAD center elevation of 99-ft +/- AGL.
Misc Equipment: One (1) Alcatel-Lucent RRH2x40-AWS Remote Radio Head mounted to the façade of one (1) building penthouse.
- **Verizon (Proposed– Gamma Sector):**
Antennas: Two (2) Andrew SBNHH-1D65B panel antennas pipe mounted to one (1) building penthouse with a RAD center elevation of 99-ft +/- AGL.
Misc Equipment: One (1) Alcatel-Lucent RRH2x60-AWS and one (1) Alcatel-Lucent RRH2x60-PCS Remote Radio Heads mounted to the façade of one (1) building penthouse.
Cables: One (1) 1-1/4-in dia. Hybriflex Fiber jumper cables routed within the existing cable tray from the main distribution box to the sector distribution box.

CENTEK engineering, INC.
Structural Evaluation Letter
Verizon Wireless ~ Hartford West
600 Asylum Avenue
Hartford, CT 06105

The proposed antenna installation meets the requirements of the 2005 Connecticut State Building Code considering the basic wind speed (3-second gust) of 95 mph as required in Appendix K of the Connecticut supplement per Table 1609.3.1 considering Exposure Category B. Our findings are based on the assumption that the hosting structure, all structural members and appurtenances were properly designed, detailed, fabricated, installed and have been properly maintained since erection.

In conclusion, the proposed Verizon antenna upgrade will not negatively impact the structural integrity of the existing antenna support structure or host building. If there are any questions regarding this matter, please feel free to call.

Respectfully Submitted by:



Timothy J. Lynn, PE
Structural Engineer

