

March 27, 2015

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

Re: **Notice of Exempt Modification – Facility Modification  
175 West Rocks Road, Norwalk, Connecticut**

Dear Ms. Bachman:

Cellco Partnership d/b/a Verizon Wireless (“Cellco”) currently maintains twelve (12) wireless telecommunications antennas at the 94-foot level of the existing 115-foot water tank at 175 West Rocks Road in Norwalk (the “Property”). The water tank and Property are owned by the First Taxing District of Norwalk. The Council approved Cellco’s shared use of this tower in 1992 and retains jurisdiction over this facility. Cellco now intends to modify its facility by replacing nine (9) of its existing antennas with three (3) model LNX-6514DS-VTM, 700 MHz antennas; three (3) model HBXX-6516DS-VTM, 1900 MHz antennas; and three (3) model HBXX-6516DS-VTM, 2100 MHz antennas, all at the same level on the tank. Cellco also intends to install three (3) remote radio heads (“RRHs”) behind its 1900 MHz antennas and one (1) HYBRIFLEX™ antenna cable. Included in Attachment 1 are specifications for Cellco’s replacement antennas, RRHs and HYBRIFLEX™ cable.

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 Harry Rilling, Mayor for the City of Norwalk. A copy of this letter is also being sent to First Taxing District, 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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# Robinson+Cole

Melanie A. Bachman

March 27, 2015

Page 2

1. The proposed modifications will not result in an increase in the height of the existing water tank. Cellco's replacement antennas and RRHs will be located at the 94-foot level of the 115-foot water tank.
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 cumulative 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 water tank and its foundation 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:

Harry Rilling, Norwalk Mayor  
First Taxing District  
Tim Parks

# **ATTACHMENT 1**

# Product Specifications

COMMScope®

LNX-6514DS-VTM

Andrew® Antenna, 698–896 MHz, 65° horizontal beamwidth, RET compatible

POWERED BY



## Electrical Specifications

Frequency Band, MHz	698–806	806–896
Gain, dBi	15.7	16.3
Beamwidth, Horizontal, degrees	65	65
Beamwidth, Vertical, degrees	12.5	11.2
Beam Tilt, degrees	0–10	0–10
USLS, typical, dB	17	18
Front-to-Back Ratio at 180°, dB	32	30
CPR at Boresight, dB	20	20
CPR at Sector, dB	10	10
Isolation, dB	30	30
VSWR   Return Loss, dB	1.4   15.6	1.4   15.6
PIM, 3rd Order, 2 x 20 W, dBc	-153	-153
Input Power per Port, maximum, watts	400	400
Polarization	±45°	±45°

## Electrical Specifications, BASTA\*

Frequency Band, MHz	698–806	806–896
Beamwidth, Horizontal Tolerance, degrees	±3	±3

\* 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.](#)

## Mechanical Specifications

Color   Radome Material	Light gray   Fiberglass, UV resistant
Connector Interface   Location   Quantity	7-16 DIN Female   Bottom   2
Wind Loading, maximum	617.7 N @ 150 km/h 138.9 lbf @ 150 km/h
Wind Speed, maximum	241.0 km/h   149.8 mph
Antenna Dimensions, L x W x D	1847.0 mm x 301.0 mm x 181.0 mm   72.7 in x 11.9 in x 7.1 in
Net Weight	14.2 kg   31.3 lb
Model with factory installed AISG 2.0 RET	LNX-6514DS-A1M

# Product Specifications

COMMSCOPE®

POWERED BY



## HBXX-6516DS-VTM

**Andrew® Quad Port Teletilt® Antenna, 1710–2180 MHz, 65° horizontal beamwidth, RET compatible**

- Each DualPol® array can be independently adjusted for greater flexibility
- Excellent gain, VSWR, front-to-back ratio, and PIM specifications for robust network performance
- Ideal choice for site collocations and tough zoning restrictions
- Great solution to maximize network coverage and capacity
- The values presented on this datasheet have been calculated based on N-P-BASTA White Paper version 9.6 by the NGMN Alliance

### Electrical Specifications

Frequency Band, MHz	1710–1880	1850–1990	1920–2180
Gain by all Beam Tilts, average, dBi	17.2	17.2	17.5
Gain by all Beam Tilts Tolerance, dB	±0.3	±0.3	±0.5
	0 °   17.0	0 °   17.1	0 °   17.4
Gain by Beam Tilt, average, dBi	5 °   17.3	5 °   17.4	5 °   17.7
	10 °   17.0	10 °   17.0	10 °   17.2
Beamwidth, Horizontal, degrees	67	66	64
Beamwidth, Horizontal Tolerance, degrees	±2.7	±2.3	±3.5
Beamwidth, Vertical, degrees	7.5	7.0	6.6
Beamwidth, Vertical Tolerance, degrees	±0.5	±0.4	±0.4
Beam Tilt, degrees	0–10	0–10	0–10
USLS, dB	18	19	19
Front-to-Back Total Power at 180° ± 30°, dB	26	26	26
CPR at Boresight, dB	22	22	22
CPR at Sector, dB	9	9	9
Isolation, dB	30	30	30
VSWR   Return Loss, dB	1.4   15.6	1.4   15.6	1.4   15.6
PIM, 3rd Order, 2 x 20 W, dBc	-153	-153	-153
Input Power per Port, maximum, watts	350	350	350
Polarization	±45°	±45°	±45°
Impedance	50 ohm	50 ohm	50 ohm

### General Specifications

Antenna Brand	Andrew®
Antenna Type	DualPol® single band, quad
Band	Single band
Brand	DualPol®   Teletilt®
Operating Frequency Band	1710 – 2180 MHz
Number of Ports, all types	4

### Mechanical Specifications

Color	Light gray
Lightning Protection	dc Ground
Radiator Material	Low loss circuit board
Radome Material	PVC, UV resistant
RF Connector Interface	7-16 DIN Female

# PCS RF MODULES

## RRH1900 2X60 - HW CHARACTERISTICS

LA6.0.1/13.3

<b>RRH2x60</b>	
RF Output Power	2x60W
Instantaneous Bandwidth	20MHz
Transmitter	2 TX
Receiver	1900 HW version 1900A HW version
Features	2 Branch RX – LA6.0.1 4 Branch RX – LR13.3 AISG 2.0 for RET/TMA
Power	Internal Smart Bias-T -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

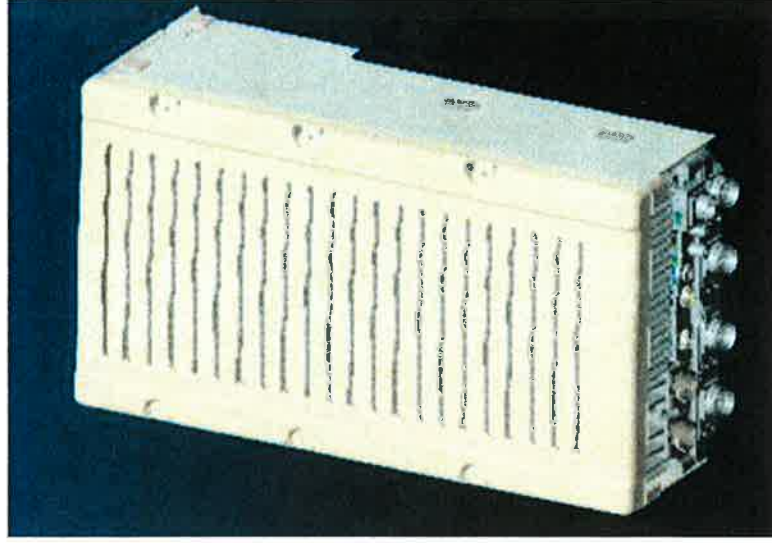


# NEW PCS RF MODULES FOR VZW

## RRH2X60 - HW CHARACTERISTICS

LR14.3

	<b>RRH2x60</b>
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.)

**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

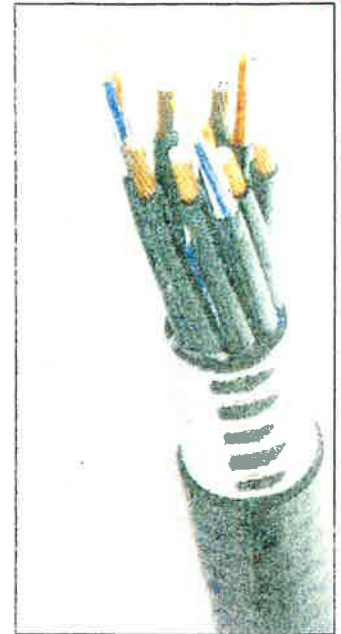


Figure 1: HYBRIFLEX Series

**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, 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)

DC-Resistance Outer Conductor Armor	[Ω/km (Ω/1000ft)]	0.68 (0.205)
DC-Resistance Power Cable, 8 4mm² (8AWG)	[Ω/km (Ω/1000ft)]	2.1 (0.307)

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	

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-95-638, UL Type XHHW-2, UL 44, UL-LS Limited Smoke, UL VW-1, IEEE-383 (1974), IEEE1292/FT4, RoHS Compliant

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

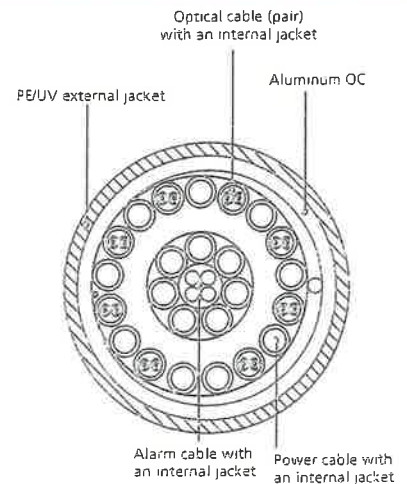


Figure 2: Construction Detail

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



# **ATTACHMENT 2**



# **ATTACHMENT 3**

December 15, 2014

Mr. Steve Schadler  
Verizon Wireless  
99 East River Drive  
East Hartford, CT 06108

*Re: Structural Evaluation Letter ~ Antenna Upgrade  
Verizon Wireless Site Ref ~ North Norwalk  
177 West Rocks Road  
Norwalk, CT 06851*

*Centek Project No. 14309.019*

Dear Mr. Schadler,

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 115-ft +/- tall host water tower to support the proposed modified antenna configuration. The existing antenna installation consists of three (3) antenna sectors mounted to the existing water tower handrail. 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 Sector):**  
**Antennas:** One (1) Antel BXA-70063-6CF panel antenna and two (2) RFS FD9R6004/2C-3L diplexers mounted to the existing water tower handrail with a RAD center elevation of 94-ft +/- AGL.  
**Misc. Equipment:** One (1) Alcatel-Lucent RRH2x40-AWS Remote Radio Head and one (1) RFS DB-E1-3B-8AB-0Z sector distribution box mounted to the existing water tower handrail with a RAD center elevation of 94-ft +/- AGL.  
**Cables:** Four (4) 1-5/8" dia. coax cables routed from the equipment shelter and one (1) 1-1/4" dia. Hybriflex Fiber jumper cable routed from the main distribution box to the sector distribution box.
- **Verizon (Existing to Remove – Alpha Sector):**  
**Antennas:** One (1) Antel BXA-70063-6CF, one (1) RYMSA MGD3-800T0 and one (1) Antel BXA-171063-8BF panel antennas mounted to the existing water tower handrail with a RAD center elevation of 94-ft +/- AGL.
- **Verizon (Proposed - Alpha Sector):**  
**Antennas:** One (1) Andrew LNX-6514DS panel antenna, two (2) Andrew HBXX-6516DS panel antennas and one (1) Alcatel-Lucent RRH2x60-PCS Remote Radio Head mounted to the existing water tower handrail with a RAD center elevation of 94-ft +/- AGL.



CEN TEK engineering, INC.  
Structural Evaluation Letter  
Verizon Wireless ~ North Norwalk  
177 West Rocks Road  
Norwalk, CT 06851

- **Verizon (Existing to Remain – Beta Sector):**  
**Antennas:** One (1) Swedcom SWCP-2x5514 panel antenna and two (2) RFS FD9R6004/2C-3L diplexers mounted to the existing water tower handrail with a RAD center elevation of 94-ft +/- AGL.  
**Misc. Equipment:** One (1) Alcatel-Lucent RRH2x40-AWS Remote Radio Head and one (1) RFS DB-E1-3B-8AB-OZ sector distribution box mounted to the existing water tower handrail with a RAD center elevation of 94-ft +/- AGL.  
**Cables:** Four (4) 1-5/8" dia. coax cables routed from the equipment shelter and one (1) 1-1/4" dia. Hybriflex Fiber jumper cable routed from the main distribution box to the sector distribution box.
- **Verizon (Existing to Remove – Beta Sector):**  
**Antennas:** One (1) Antel BXA-70063-6CF, one (1) RYMSA MGD3-800T0 and one (1) Antel BXA-171063-8BF panel antennas mounted to the existing water tower handrail with a RAD center elevation of 94-ft +/- AGL.
- **Verizon (Proposed - Beta Sector):**  
**Antennas:** One (1) Andrew LNX-6514DS panel antenna, two (2) Andrew HBXX-6516DS panel antennas and one (1) Alcatel-Lucent RRH2x60-PCS Remote Radio Head mounted to the existing water tower handrail with a RAD center elevation of 94-ft +/- AGL.
- **Verizon (Existing to Remain – Gamma Sector):**  
**Antennas:** One (1) Antel BXA-70063-6CF panel antenna and two (2) RFS FD9R6004/2C-3L diplexers mounted to the existing water tower handrail with a RAD center elevation of 94-ft +/- AGL.  
**Misc. Equipment:** One (1) Alcatel-Lucent RRH2x40-AWS Remote Radio Head and one (1) RFS DB-E1-3B-8AB-OZ sector distribution box mounted to the existing water tower handrail with a RAD center elevation of 94-ft +/- AGL.  
**Cables:** Four (4) 1-5/8" dia. coax cables routed from the equipment shelter and one (1) 1-1/4" dia. Hybriflex Fiber jumper cable routed from the main distribution box to the sector distribution box.
- **Verizon (Existing to Remove – Gamma Sector):**  
**Antennas:** One (1) Antel BXA-70063-6CF, one (1) RYMSA MGD3-800T0 and one (1) Antel BXA-171085-8BF panel antennas mounted to the existing water tower handrail with a RAD center elevation of 94-ft +/- AGL.
- **Verizon (Proposed - Gamma Sector):**  
**Antennas:** One (1) Andrew LNX-6514DS panel antenna, two (2) Andrew HBXX-6516DS panel antennas and one (1) Alcatel-Lucent RRH2x60-PCS Remote Radio Head mounted to the existing water tower handrail with a RAD center elevation of 94-ft +/- AGL.
- **Verizon (Existing to Remain):**  
**Misc. Equipment:** One (1) RFS DB-T1-6Z-8AB-OZ main distribution box mounted to the existing water tower handrail.  
**Cables:** One (1) 1-5/8" dia. Hybriflex Fiber feeder cable routed from the existing Verizon Wireless equipment shelter.

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Structural Evaluation Letter  
Verizon Wireless ~ North Norwalk  
177 West Rocks Road  
Norwalk, CT 06851

The proposed antenna installation meets the requirements of the 2005 Connecticut State Building Code considering the basic wind speed (3-second gust) of 105 mph as required in Appendix K of the Connecticut supplement per Table 1609.3.1 considering Exposure Category C. 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 water tower. If there are any questions regarding this matter, please feel free to call.

Respectfully Submitted by:



Timothy J. Lynn, PE  
Structural Engineer

