

March 11, 2015

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

Re: **Notice of Exempt Modification – Facility Modification**
213 Court Street, Middletown, Connecticut

Dear Ms. Bachman:

Cellco Partnership d/b/a Verizon Wireless (“Cellco”) currently maintains a wireless telecommunications facility on the roof of the existing office building at 213 Court Street in Middletown. Cellco’s facility consists of twelve (12) wireless telecommunications antennas attached to the façade of the building, 179-feet above ground level. Equipment associated with the antennas is located inside the building. The building and underlying property are owned by Middlesex Mutual Assurance Co. The 213 Court Street facility was approved by the Council in 1990 (Docket No. 125). The Council retains jurisdiction over this existing cell site. 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-6517DS-VTM, 1900 MHz antennas; and three (3) model HBXX-6517DS-VTM, 2100 MHz antennas, all at the same 179-foot level. Cellco also intends to install three (3) remote radio heads (“RRHs”) behind its 1900 MHz antennas and one (1) HYBRIFLEX™ fiber optic antenna cable. Included in Attachment 1 are specifications for Cellco’s replacement antennas, RRHs and fiber 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 Daniel T. Drew, Mayor of the City of Middletown. A copy of this letter is also being sent to Middlesex Mutual Assurance Co., 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

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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 be located at the same level on the building façade.
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 existing 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:

Daniel T. Drew, Middletown Mayor
Middlesex Mutual Assurance Co.
Timothy 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®

HBXX-6517DS-VTM

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



Electrical Specifications

| Frequency Band, MHz | 1710–1880 | 1850–1990 | 1920–2180 |
|---|-------------------------------------|-------------------------------------|-------------------------------------|
| Gain by all Beam Tilts, average, dBi | 18.5 | 18.6 | 18.8 |
| Gain by all Beam Tilts Tolerance, dB | ±0.4 | ±0.3 | ±0.4 |
| Gain by Beam Tilt, average, dBi | 0° 18.4 3° 18.7 6° 18.4 | 0° 18.4 3° 18.7 6° 18.5 | 0° 18.7 3° 18.9 6° 18.6 |
| Beamwidth, Horizontal, degrees | 67 | 66 | 65 |
| Beamwidth, Horizontal Tolerance, degrees | ±2.4 | ±1.7 | ±2.9 |
| Beamwidth, Vertical, degrees | 5.0 | 4.7 | 4.4 |
| Beamwidth, Vertical Tolerance, degrees | ±0.3 | ±0.3 | ±0.3 |
| Beam Tilt, degrees | 0–6 | 0–6 | 0–6 |
| USLS, dB | 18 | 19 | 19 |
| Front-to-Back Total Power at 180° ± 30°, dB | 25 | 26 | 26 |
| CPR at Boresight, dB | 22 | 23 | 22 |
| CPR at Sector, dB | 10 | 10 | 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° |

*Values calculated using NGMN Alliance N-P-BASTA v9.6

Mechanical Specifications

| | |
|---|--|
| Color Radome Material | Light gray PVC, UV resistant |
| Connector Interface Location Quantity | 7-16 DIN Female Bottom 4 |
| Wind Loading, maximum | 668.0 N @ 150 km/h 150.2 lbf @ 150 km/h |
| Wind Speed, maximum | 241.0 km/h 149.8 mph |
| Antenna Dimensions, L x W x D | 1903.0 mm x 305.0 mm x 166.0 mm 74.9 in x 12.0 in x 6.5 in |
| Net Weight | 19.5 kg 43.0 lb |
| Model with factory installed AISG 2.0 RET | HBXX-6517DS-A2M |

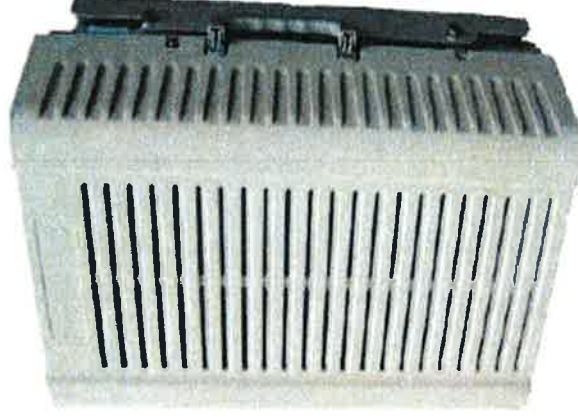


PCS RF MODULES

RRH1900 2X60 - HW CHARACTERISTICS

LA6.0.1/13.3

| RRH2x60 | |
|-------------------------|--|
| 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 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) |



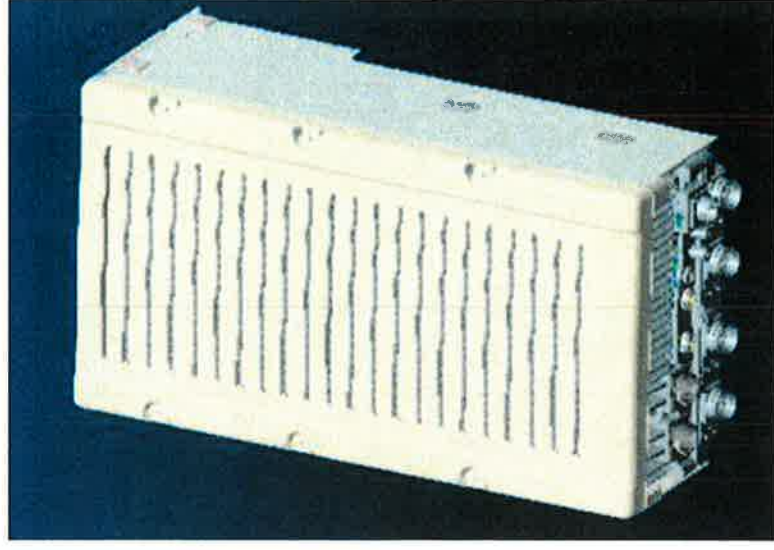
** Not a Verizon Wireless deployed product

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.)

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

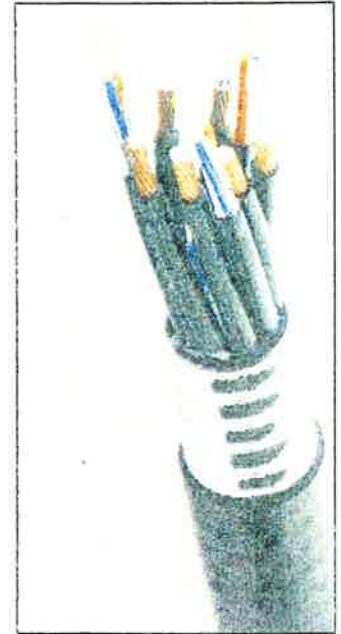


Figure 1: HYBRIFLEX Series

Technical Specifications

| | | | |
|--|--------------------------------|-------------------|---|
| Structure | | | |
| 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 |
| Approximate Characteristics | | | |
| 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)) | 100 (4.1) |
| Insertion Loss @ wavelength 850nm | | dB/km | 3.0 |
| Insertion Loss @ wavelength 1310nm | | dB/km | 1.0 |
| Standards (Meets or exceeds) | | | UL34-V0, UL1666 RoHS Compliant |
| DC 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 |
| Environment | | | |
| Installation Temperature | | (°C (°F)) | -40 to +65 (-40 to 149) |
| Operation Temperature | | (°C (°F)) | -40 to +65 (-40 to 149) |

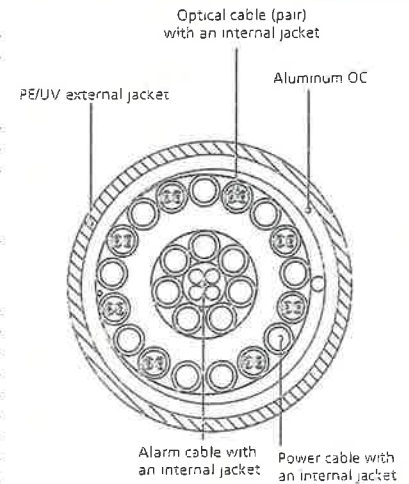


Figure 2: Construction Detail

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

ATTACHMENT 2

Site Name: **MIDDLETOWN 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 700 | 746 | 1 | 886 | 886 | 179.1 | 0.0099 | 0.4973 | 2.00% |
| VZW Cellular | 869 | 9 | 370 | 3326 | 179.1 | 0.0373 | 0.5793 | 6.44% |
| VZW PCS | 1970 | 1 | 2296 | 2296 | 179.1 | 0.0257 | 1.0000 | 2.57% |
| VZW AWS | 2145 | 1 | 2748 | 2748 | 179.1 | 0.0308 | 1.0000 | 3.08% |

Total Percentage of Maximum Permissible Exposure

14.09%

*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

February 10, 2015

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

*Re: Structural Evaluation Letter ~ Antenna Upgrade
Verizon Wireless Site Ref ~ Middletown
200 Court Street
Middletown, CT 06457*

Centek Project No. 14309.020

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 twelve (12) story host building to support the proposed modified antenna configuration. The existing installation consists of three (3) antenna sectors of four antennas each (total of 12) flush mounted to the façade of the existing 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):**
 - Antennas:** Three (3) Antel BXA-80063-6CF panel antennas pipe mounted to the façade of the existing building with a RAD center elevation of 179-ft +/- AGL.
 - Miscellaneous Equipment:** Three (3) Alcatel-Lucent RRH2x60-AWS Remote Radio Heads, three (3) Alcatel-Lucent RRH2x40-07-U Remote Radio Heads and three (3) RFS DB-E1-3B-8AB-0Z sector distribution boxes mounted to the inside face of the existing building parapet.
 - Coax:** Six (6) 1-5/8" dia. coaxial cables routed from the Verizon equipment shelter to the antenna sectors. One (1) 1-5/8" dia. main Hybriflex Fiber with power cable routed from the Verizon equipment shelter to the main distribution box. Three (3) 1-1/4" dia. Fiber jumper cables routed from the main distribution box to the sector distribution boxes.
- **Verizon (Existing to Remove):**
 - Antennas:** Three (3) Andrew LNX-6514DS, three (3) RYMSA MGD3-800T0 and three (3) Antel BXA-171063-8CF panel antennas pipe mounted to the façade of the existing building with a RAD center elevation of 179-ft +/- AGL.
 - Coax:** Six (6) 1-5/8" dia. coaxial cables routed from the Verizon equipment shelter to the antenna sectors.

CENTEK engineering, INC.
Structural Evaluation Letter
Verizon Wireless ~ Middletown
200 Court Street
Middletown, CT 06457

▪ **Verizon (Proposed):**

Antennas: Six (6) Andrew HBXX-6517DS and three (3) Andrew LNX-6514DS panel antennas pipe mounted to the façade of the existing building with a RAD center elevation of 179-ft +/- AGL.

Antennas: Three (3) Alcatel-Lucent RRH2x60-PCS Remote Radio Heads and three (3) RFS DB-E1-3B-8AB-0Z distribution boxes mounted to the inside face of the existing building parapet.

Cables: One (1) 1-5/8" dia. main Hybriflex Fiber with power cable routed from the Verizon Wireless equipment shelter to the main distribution box. Three (3) 1-1/4" dia. Fiber jumper cables routed from the main distribution box to the sector distribution boxes.

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 building. If there are any questions regarding this matter, please feel free to call.

Respectfully Submitted by:



Timothy J. Lynn, PE
Structural Engineer

