

January 8, 2016

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

Re: **Notice of Exempt Modification – Facility Modification  
1052 Boston Post Road, Milford, Connecticut**

Dear Ms. Bachman:

Cellco Partnership d/b/a Verizon Wireless (“Cellco”) currently maintains six (6) wireless telecommunications antennas (three (3) antennas at 82.5 feet above ground level (AGL) and three (3) antennas at 76.5 feet AGL) inside a 40-foot tall flagpole tower on the roof of the building at 1052 Boston Post Road in Milford, Connecticut (the “Property”). Cellco owns the flagpole tower. The flagpole tower was approved by the Council in 2004 (Petition No. 680). Cellco now intends to replace all of its existing antennas with three (3) model SBNHH-1D65B, 850/1900 MHz antennas at the 82.5-foot level and three (3) model SBNHH-1D65B, 700/2100 MHz antennas at the 76.5-foot level. Cellco also intends to install twelve (12) coaxial cable diplexers. Included in Attachment 1 are specifications for Cellco’s replacement antennas and diplexers.

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 Benjamin G. Blake, Mayor of the City of Milford. A copy of this letter is also being sent to Turnpike Lodge Inc., 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).

# Robinson+Cole

Melanie A. Bachman  
January 8, 2016  
Page 2

1. The proposed modifications will not result in an increase in the height of the existing tower. Cellco's replacement antennas will be located at the same levels within the flagpole tower as the existing antennas.
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/or local criteria.
4. The operation of the modified facility 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 behind Attachment 2.
5. The proposed modifications will not cause a change or alteration in the physical or environmental characteristics of the site.
6. The tower and building at the Property 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:

Benjamin G. Blake, Milford Mayor  
Turnpike Lodge Inc.  
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	1920–2200	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 (First Lobe), 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	1920–2200	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
	0°   14.6	0°   14.5	0°   17.4	0°   17.8	0°   18.1	0°   18.2
Gain by Beam Tilt, average, dBi	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, beampeak to 20° above beampeak, 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

SBNHH-1D65B

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## 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 km/h   150 mph

## Dimensions

Depth	180.0 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®

## Packed Dimensions

Depth	299.0 mm   11.8 in
Length	1970.0 mm   77.6 in
Width	409.0 mm   16.1 in
Shipping Weight	31.0 kg   68.3 lb

## Regulatory Compliance/Certifications

**Agency**

RoHS 2011/65/EU  
China RoHS SJ/T 11364-2006  
ISO 9001:2008

**Classification**

Compliant by Exemption  
Above Maximum Concentration Value (MCV)  
Designed, manufactured and/or distributed under this quality management system



## Included Products

# Product Specifications

COMMSCOPE®

SBNHH-1D65B

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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



## ShareLite Wideband Diplexer – In-line 698-960 MHz/1710-2200 MHz, DC pass in high frequency path

## Product Description

The ShareLite FD9R6004 Series of diplexers are designed to enable feeder sharing between systems in the 698-960 MHz range and in the 1710-2200 MHz range. The diplexer is equipped with in-line connector placement so it can be installed in the BTS cabinet or at the tower top. This is especially valuable in crowded sites or when the feeders are not easily accessible. Due to its wideband design, the FD9R6004 Series can accommodate many combining solutions between 698-960 MHz and 1710-2200 MHz systems such as LTE 700 MHz, Cellular 800 MHz with PCS, GSM900 with GSM1800, or GSM900 with UMTS. This diplexer features a highly selective filter. It provides a high level of isolation between ports, while keeping the insertion loss on both paths at an extremely low level. The FD9R6004 diplexers are available with various DC pass options, helpful in configurations with or without the Tower Mount Amplifiers installed.



## Features/Benefits

- LTE ready design
- Extremely Low Insertion Loss
- High level of Rejection between bands – Protection against interferences
- Extremely High Power Handling Capability
- Integrated DC block/bypass versions available
- Very compact & small size design – Easy installation and reduced tower load
- In-line long-neck connectors for easy connection & waterproofing
- Exceptional reliability & environmental protection (IP 67)
- Equipped with 1 \* Breathable Vent – Prevent any humidity inside the product
- Mounting hardware for Wall and Pole mount provided (P/N SEM2-1A)
- Grounding already provided through the mounting bracket
- Kit available for easy dual mount

## Technical Specifications

Product Type	Diplexer/Cross Band Coupler
Application	LTE700, GSM900, UMTS, GSM1800, Cellular 800, PCS
Frequency Range 1, MHz	698-960
Frequency Range 2, MHz	1710-2200
Configuration	Sharelite Single diplexer, outdoor, DC pass in the 1710-2170MHz path, with mounting hardware SEM2-1A
Mounting	Wall Mounting: With 4 screws (maximum 6mm diameter); Pole Mounting: With included clamp set 40-110mm (1.57-4.33)
Return Loss All Ports Min/Typ, dB	19/23
Power Handling Continuous, Max, W	1250 at common port; 750 in low frequency path & 500 in high frequency path
Power Handling Peak, Max, W	15000 in low frequency path & 8000 in high frequency path
Impedance, Ohms	50
Insertion Loss, Path 1, dB	0.07 typ.
Insertion Loss, Path 2, dB	0.13 typ.
Rejection Between Bands Min/Typ, dB	58/64@698-960MHz; 57/70@1710-2200MHz
IMP Level at the COM Port, Typ, dBm	-112 @ 2x43
DC Pass in Low Frequency Path	No
DC Pass in High Frequency Path	Yes
Temperature Range, °C (°F)	-40 to +60 (-40 to +140)
Environmental	ETSI 300-019-2-4 Class 4.1E
Ingress Protection	IP 67
Lightning Protection	EN/IEC61000-4-5 Level 4
Connectors	In-line long-neck 7-16-Female
Weight, kg (lb)	1.2 (2.6)
Shipping Weight, kg (lb)	3.2 (7) for 2 * single units in 1 * box, 9.8 (21.6) for 6 * units = 3 * Boxes in 1 * overwrap
Dimensions, H x W x D, mm (in)	147 x 164 x 37 (5.8 x 6.5 x 1.5)
Shipping Dimensions, H x W x D, mm (in)	254 x 406 x 82 (10 x 16 x 3.2) for 2 * Single Units in 1 * box, 280 x 406 x 241 (11 x 16 x 9.5) for 6 * units = 3 * Boxes in 1 * overwrap
Volume, L	0.43
Housing	Aluminum

## Notes

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





ShareLite Wideband Diplexer – In-line 698-960 MHz/1710-2200 MHz, DC pass in high frequency path

Other Documentation

FD9R6004/2C-3L Installation Instructions: Wideband\_Diplexer\_Installation\_Rev5.pdf

Installation Guide Diplexer 698-960 / 1710-2200MHz					
	Model Number	Full DC Pass	DC Pass High Band	DC Pass Low Band	Mounting Hardware Included
Single	FD9R6004/1C-3L				Y
	FD9R6004/2C-3L				Y
	FD9R6004/3C-3L				Y
Dual	FD9R6008/1C-3L				Y
	FD9R6008/2C-3L				Y
	FD9R6008/3C-3L				Y

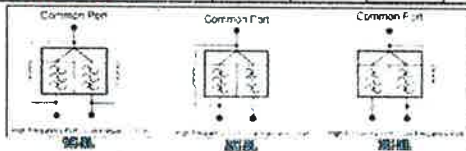


Fig. 1: Single Band ShareLite Wideband Diplexer with DC Pass in High Band; Fig. 2: Dual Band ShareLite Wideband Diplexer with DC Pass in High Band; Fig. 3: Dual Band ShareLite Wideband Diplexer with DC Pass in Low Band

Mounting Hardware and Ground Cable Ordering Information	
Model Number	Description
62MR-1A	Mounting Hardware, Pads mount with 1/8" (2mm) (Included with the Single and Dual Diplexers with Grounding). (Not included with the product)
62MR-3	Assembly Kit for 2 pcs of FD9R6004/2C-3L. (Can be ordered separately but included with the Dual Diplexer 2C)
62MR-2	Ground Cable, 2m, includes lugs (Optional)
62MR-4	Ground Cable, 2m, includes lugs (Optional)
62MR-5	Mounting Hardware for 6 Diplexers, Three Bars (Optional)

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



# **ATTACHMENT 2**

Site Name: **FOREST HEIGHTS 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 <sup>2</sup> )	Maximum Permissible Exposure* (mW/cm <sup>2</sup> )	Fraction of MPE (%)
VZW 700	746	1	1019	1019	76.5	0.0626	0.4973	12.59%
VZW Cellular	869	9	265	2388	82.5	0.1262	0.5793	21.78%
VZW PCS	1970	1	2264	2264	82.5	0.1196	1.0000	11.96%
VZW AWS	2145	1	2333	2333	76.5	0.1434	1.0000	14.34%
<b>Total Percentage of Maximum Permissible Exposure</b>								<b>60.68%</b>

\*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<sup>2</sup> = milliwatts per square centimeter

ERP = Effective Radiated Power

Absolute worst case maximum values used.

# **ATTACHMENT 3**

January 4, 2016

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

*Re: Structural Evaluation Letter ~ Antenna Upgrade  
Verizon Wireless Site Ref ~ Forest Heights  
1052 Boston Post Road  
Milford, CT 06460*

Centek Project No. 15001.127

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 host flagpole and building to support the proposed modified antenna configuration. The existing antenna installation consists of three (3) antenna sectors mounted in two (2) arrays within an existing flagpole. 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):**  
**Cables:** Eighteen (18) 1-1/4-in dia. coaxial cables routed within existing flagpole.
- **Verizon (Existing to Remove):**  
**Antennas:** Three (3) Antel BXA-70063-6CF panel antennas mounted within the flagpole with a RAD center elevation of 76.5-ft +/- AGL and three (3) Antel QXW-636063120BF panel antennas mounted within the flagpole with a RAD center elevation of 82.5-ft +/- AGL.
- **Verizon (Proposed):**  
**Antennas:** Three (3) Andrew SBNHH-1D65B panel antennas and six (6) RFS FD9R6004/2C-3L diplexers mounted within the flagpole with a RAD center elevation of 76.5-ft +/- AGL and three (3) Andrew SBNHH-1D65B panel antennas and six (6) RFS FD9R6004/2C-3L diplexers mounted within the flagpole with a RAD center elevation of 82.5-ft +/- AGL.  
**Appurtenances:** Three (3) Alcatel Lucent RRH2x60-LTE remote radio head, three (3) Alcatel Lucent RRH4x45/2x90-AWS remote radio head, three (3) Alcatel Lucent RRH2x90-PCS remote radio head and two (2) RFS DB-T1-6Z-8AB-0Z distribution boxes mounted within the equipment shelter.

**CEN TEK** engineering, INC.  
Structural Evaluation Letter  
Verizon Wireless ~ Forest Heights  
1052 Boston Post Road  
Milford, CT 06460

The proposed antenna installation meets the requirements of the 2005 Connecticut State Building Code considering the basic wind speed (3-second gust) of 110 mph as required in Appendix K of the Connecticut supplement per Table 1609.3.1. 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

