

EM-SPRINT-051-130207

3965 Congress Street

Fairfield



RECEIVED
JUL 10 2014

1 Robbins Road
Westford, MA 01886

CONNECTICUT
SITING COUNCIL

July 9, 2014

State of Connecticut
Connecticut Siting Council
10 Franklin Square
New Britain, CT 06051

RE: Notification of Construction Completion on telecommunication facilities

To whom it may concern:

Alcatel Lucent hereby acknowledges that the list of attached sites have completed construction per the approval granted on the specified date. Please advise if further information is needed..

Very truly yours,

Martha Powers

Martha Powers
Lead Development Manager
Alcatel-Lucent
Sprint Vision Project
1 Robbins Road
Westford, MA 01886

Cc: FST, Siterra

EM/TS #	Address	Town	Sprint ID	Decision Date
EM-SPRINT-062-130912	1065 Wintergreen Avenue	Hamden	CT03XC003	10/15/2013
EM-SPRINT-NEXTEL-060-130118	10 Tanner Marsh Road	Guilford	CT03XC022	2/14/2013
EM-SPRINT-004-130822	181 Montevideo Road	Avon	CT03XC053	9/6/2013
EM-SPRINT-NEXTEL-155-130214A	1358 New Britain Ave.	West Hartford	CT03XC057	3/1/2013
EM-SPRINT-NEXTEL-164-130201	440 Hayden Station Road	Windsor	CT03XC065	3/8/2013
EM-SPRINT-NEXTEL-132-130201	59 McGuire Road	South Windsor	CT03XC066	3/1/2013
EM-SPRINT-NEXTEL-054-130201	299 Paxton Way	Glastonbury	CT03XC081	3/1/2013
EM-SPRINT-NEXTEL-094-130214E	36 Prospect Street	Newington	CT03XC084	3/1/2013
EM-SPRINT-110-130725	10 Sparks Street	Plainville	CT03XC086	8/8/2013
EM-SPRINT-007-130314	260 Beckley Road	Kensington	CT03XC088	4/5/2013
EM-SPRINT-NEXTEL-155-130201	570 New Park Avenue	West Hartford	CT03XC091	3/1/2013
EM-SPRINT-NEXTEL-106-130201	430 Middlesex Turnpike	Old Saybrook	CT03XC102	3/1/2013
EM-SPRINT-NEXTEL-105-130201	30 Short Hills Road	Old Lyme	CT03XC104	3/1/2013
EM-SPRINT-NEXTEL-152-130201	41 Manitock Hill Road	Waterford	CT03XC105	3/1/2013
EM-SPRINT-NEXTEL-045-130201	93 Roxbury Road	East Lyme	CT03XC110	3/1/2013
EM-SPRINT-152-130114	45R Fargo Road	Waterford	CT03XC112	2/14/2013
EM-SPRINT-NEXTEL-027-130201	48 Cow Hill Road	Clinton	CT03XC156	3/1/2013
EM-SPRINT-NEXTEL-082-130201	238 Meridan Road	Middlefield	CT03XC160	3/8/2013
EM-SPRINT-047-130109	160 Plantation Road	East Windsor	CT03XC202	2/7/2013
EM-SPRINT-NEXTEL-077-130214	53 Slater Street	Manchester	CT03XC211	3/1/2013
EM-SPRINT-142-130109	497 Old Post Road	Tolland	CT03XC212	2/7/2013
EM-SPRINT-NEXTEL-042-130222	94 East High Street	East Hampton	CT03XC335	3/8/2013
EM-SPRINT-057-121226	Butternut Hollow Road	Greenwich	CT03XC343	1/11/2013
EM-SPRINT-158-130213	515 Boston Post Road	Westport	CT03XC355	3/1/2013
EM-SPRINT-046-130402	206 Everett Road	Easton	CT03XC362	4/19/2013
EM-SPRINT-085-130322	474 MAIN STREET	MONROE	CT03XC365	4/5/2013
EM-SPRINT-086-131011	57 Cook Drive	Montville	CT03XC365	10/25/2013
EM-SPRINT-118-130322	76 EAST RIDGE	RIDGEFIELD	CT03XC370	4/5/2013
EM-SPRINT-097-131230	20 Barnabas Road	Newtown	CT03XC383	1/21/2014
EM-SPRINT-051-130207	3965 Congress Street	Fairfield	CT03XC385	3/1/2013
EM-SPRINT-NEXTEL-094-130214A	123 Costello Road	Newington	CT23XC555	3/1/2013
EM-SPRINT-119-131008	699 Old Main Street	Rocky Hill	CT23XC556	10/25/2013
EM-SPRINT-077-131008	60 Adams Street	Manchester	CT23XC557	10/25/2013
EM-SPRINT-NEXTEL-080-130123	462 West Main Street	Meriden	CT25XC840	2/14/2013
EM-SPRINT-096-130920	18 Hilltop View Lane	New Milford	CT33XC095	10/4/2013
EM-SPRINT-157-130213	237 Godfrey Road	Weston	CT33XC522	3/1/2013
EM-SPRINT-018-131008	20 Vale Road	Brookfield	CT33XC525	10/25/2013
EM-SPRINT-077-130528	595 Keeney Street	Manchester	CT33XC538	6/14/2013
EM-SPRINT-NEXTEL-129-130214	400 Main Street	Somers	CT33XC554	3/1/2013
EM-SPRINT-047-130322	15 CHAMBERLAIN	BROADBROOK	CT33XC565	4/5/2013
EM-SPRINT-004-130502	277 Huckleberry Road	Avon	CT33XC589	5/17/2013

EM-SPRINT-143-130604	218 Wheeler Road	Torrington	CT33XC592	6/28/2013
EM-SPRINT-140-130724	583 Chapel Street	Thomaston	CT33XC603	8/8/2013
EM-SPRINT-103-130920	Charles Marshall Drive	Norwalk	CT33XC802	10/4/2013
EM-SPRINT-NEXTEL-064-130214	439-455 Homestead Ave.	Hartford	CT43XC805	3/1/2013
EM-SPRINT-064-130311	99 Meadow Street	Hartford	CT43XC806	4/5/2013
EM-SPRINT-083-131127	290 Preston Ave.	Middletown	CT43XC816	12/16/2013
EM-SPRINT-128-130920	530 Bushy Hill Road	Simsbury	CT43XC825	10/4/2013
EM-SPRINT-164-130405A	340 Bloomfield Avenue	Windsor	CT43XC826	4/19/2013
EM-SPRINT-077-130109	239 Middle Turnpike	Manchester	CT43XC827	2/13/2013
EM-SPRINT-165-130118	2-4 Volunteer Drive	Windsor Locks	CT43XC828	2/14/2013
EM-SPRINT-NEXTEL-139-130214	44 Fyler Place	Suffield	CT43XC829	3/8/2013
EM-SPRINT-111-130712	171 Town Hill Road	Plymouth	CT54XC712	7/26/2013
EM-SPRINT-009-130322	38 Spring Hill Road	Bethel	CT54XC749	4/5/2013
EM-SPRINT-154-131011	315 Spencer Plains Road	Westbrook	CT54XC758	10/25/2013
EM-SPRINT-023-130405	14 Canton Springs Road	Canton	CT54XC760	4/19/2013
EM-SPRINT-104-130606	153 Old Salem Road	Norwich	CT54XC775	6/28/2013
EM-SPRINT-164-130405B	99 Day Hill Road	Windsor	CT54XC787	4/19/2013
EM-SPRINT-132-130920	300 Governor's Highway	South Windsor	CT60XC014	10/4/2013
EM-SPRINT-094-130108	605 Willard Avenue	Newington	CT60XC018	1/25/2013
EM-SPRINT-146-130506	197 South Street	Vernon	CT60XC935	5/24/2013
EM-SPRINT-146-130311	777 Talcottville Road	Vernon	CT70XC147	4/5/2013
EM-SPRINT-126-130531	62 Birdseye Road	Shelton	CT73XC004	6/21/2013



STATE OF CONNECTICUT

CONNECTICUT SITING COUNCIL

Ten Franklin Square, New Britain, CT 06051

Phone: (860) 827-2935 Fax: (860) 827-2950

E-Mail: siting.council@ct.gov

www.ct.gov/csc

March 1, 2013

Jennifer Young Gaudet
HPC Wireless Services
46 Mill Plain Road, Floor 2
Danbury, CT 06811

RE: **EM-SPRINT-051-130207** - Sprint Spectrum, L.P. notice of intent to modify an existing telecommunications facility located at 3965 Congress Street, Fairfield, Connecticut.

Dear Ms. Gaudet:

The Connecticut Siting Council (Council) hereby acknowledges your notice to modify this existing telecommunications facility, pursuant to Section 16-50j-73 of the Regulations of Connecticut State Agencies with the following conditions:

- Any deviation from the proposed modification as specified in this notice and supporting materials with Council shall render this acknowledgement invalid;
- Any material changes to this modification as proposed shall require the filing of a new notice with the Council;
- Within 45 days after completion of construction, the Council shall be notified in writing that construction has been completed;
- The validity of this action shall expire one year from the date of this letter; and
- The applicant may file a request for an extension of time beyond the one year deadline provided that such request is submitted to the Council not less than 60 days prior to the expiration;

The proposed modifications including the placement of all necessary equipment and shelters within the tower compound are to be implemented as specified here and in your notice dated February 8, 2013. The modifications are in compliance with the exception criteria in Section 16-50j-72 (b) of the Regulations of Connecticut State Agencies as changes to an existing facility site that would not increase tower height, extend the boundaries of the tower site, increase noise levels at the tower site boundary by six decibels, and increase the total radio frequencies electromagnetic radiation power density measured at the tower site boundary to or above the standard adopted by the State Department of Environmental Protection pursuant to General Statutes § 22a-162. This facility has also been carefully modeled to ensure that radio frequency emissions are conservatively below State and federal standards applicable to the frequencies now used on this tower.

This decision is under the exclusive jurisdiction of the Council. Please be advised that the validity of this action shall expire one year from the date of this letter. Any additional change to this facility will require explicit notice to this agency pursuant to Regulations of Connecticut State Agencies Section 16-50j-73. Such notice shall include all relevant information regarding the proposed change with cumulative worst-case modeling of radio frequency exposure at the

closest point of uncontrolled access to the tower base, consistent with Federal Communications Commission, Office of Engineering and Technology, Bulletin 65. Thank you for your attention and cooperation.

Very truly yours,

A handwritten signature in cursive script that reads "L Roberts".

Linda Roberts
Executive Director

LR/CDM/cm

c: The Honorable Michael C. Tetreau, First Selectman, Town of Fairfield
Joseph E. Devonshuk, Town Planner, Town of Fairfield

HPC Wireless Services

46 Mill Plain Rd.

Floor 2

Danbury, CT, 06811

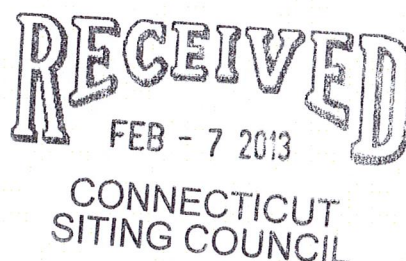
P.: 203.797.1112



February 6, 2013

VIA OVERNIGHT COURIER

Connecticut Siting Council
 10 Franklin Square
 New Britain, Connecticut 06051
 Attn: Ms. Linda Roberts, Executive Director



Re: Sprint Spectrum, L.P. – exempt modification
3965 Congress Street, Fairfield, Connecticut

Dear Ms. Roberts:

This letter and attachments are submitted on behalf of Sprint Spectrum, L.P. (“Sprint”). Sprint is undertaking modifications to certain existing sites in its Connecticut system in order to implement updated technology. Please accept this letter and attachments as notification, pursuant to R.C.S.A. Section 16-50j-73, of construction that constitutes an exempt modification pursuant to R.C.S.A. Section 16-50j-72(b)(2). In compliance with R.C.S.A. Section 16-50j-73, a copy of this letter and attachments is being sent to the First Selectman of the Town of Fairfield.

Sprint plans to modify the existing wireless communications facility owned by the Town of Fairfield and located at 3965 Congress Street in the Town of Fairfield (coordinates 41°-11'-18.05" N, 73°-17'-56.66" W). Attached are a compound plan and elevation depicting the planned changes, and documentation of the structural sufficiency of the structure to accommodate the revised antenna configuration. Also included is a power density report reflecting the modification to Sprint’s operations at the site.

The changes to the facility do not constitute a modification as defined in Connecticut General Statutes (“C.G.S.”) Section 16-50i(d) because the general physical characteristics of the facility will not be significantly changed. Rather, the planned changes to the facility fall squarely within those activities explicitly provided for in R.C.S.A. Section 16-50j-72(b)(2).

1. Sprint will replace six (6) existing CDMA antennas with three (3) dual-band panel antennas and three (3) new dual-pole CDMA antennas mounted on the existing platform

at a center line of approximately 139'. Sprint will also mount six RRHs (remote radio heads) around the pole below the antennas. Sprint will also replace its existing GPS antenna, and will replace its existing coaxial cables with three (3) hybridflex cables. During an interim period of up to one year, three (3) CDMA antennas and the existing coaxial cables will remain. The proposed modifications will not extend the height of the approximately 150' structure.

2. The proposed changes will not extend the site boundaries. Sprint will replace two (2) existing cabinets and add a third cabinet and a fiber distribution box on an H-frame, all on its existing concrete pad. These changes will have no effect on the site boundaries.

3. The proposed changes will not increase the noise level at the existing facility by six decibels or more. The incremental effect of the proposed changes will be negligible.

4. The changes to the facility will not increase the calculated "worst case" power density for the combined operations at the site to a level at or above the applicable standard for uncontrolled environments as calculated for a mixed frequency site. As indicated on the attached report prepared by EBI Consulting, Sprint's operations at the site will result in a power density of approximately 12.765%; the combined site operations will result in a total power density of approximately 79.565%.

Please feel free to contact me by phone at (860) 798-7454 or by e-mail at jgaudet@hpcwireless.com with questions concerning this matter. Thank you for your consideration.

Respectfully yours,



Jennifer Young Gaudet

cc: Honorable Michael Tetreau, First Selectman, Town of Fairfield
Town of Fairfield (underlying property owner)

Sprint
VISION
1 INTERNATIONAL BLDG SUITE 800
HAWAII, NJ 07445
P: 300.957.7441

Alcatel-Lucent
600 PRODUENT AVE
MURRAY HILL, NJ 07974

S&A
Salient
ARCHITECTS, LLC

New Jersey Office
8 EAST DELAWARE AVENUE
PHILADELPHIA, NJ 08102
P: 215.566.2222
F: 215.566.2244

Professional Engineer
No. 13606
Professional Seal
P.E. Christopher J. ...

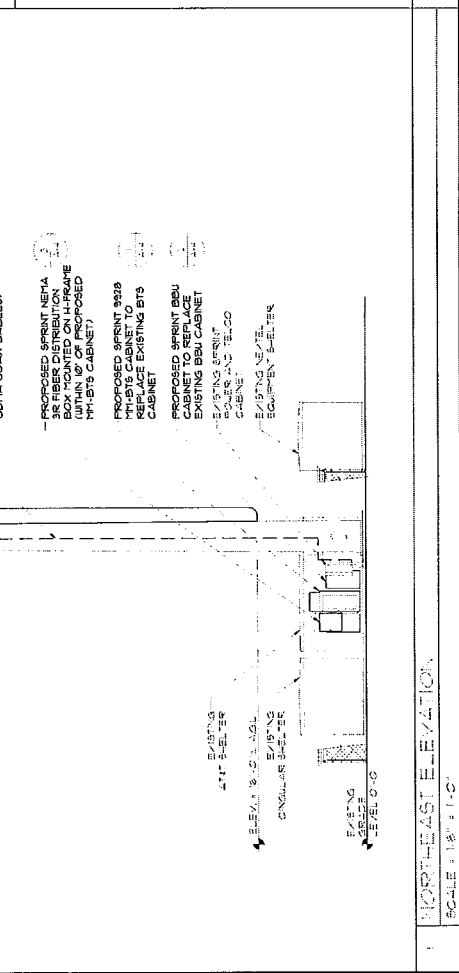
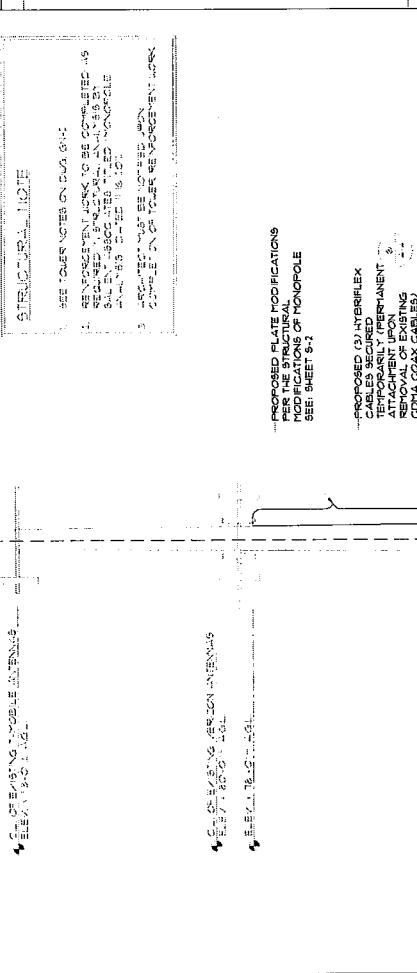
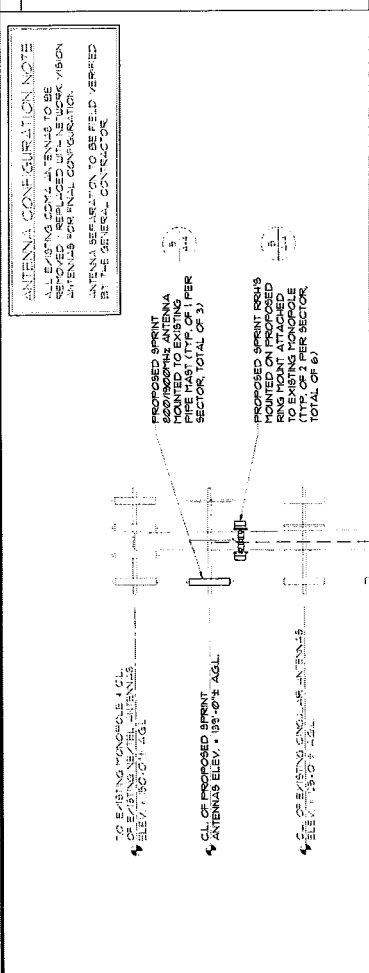
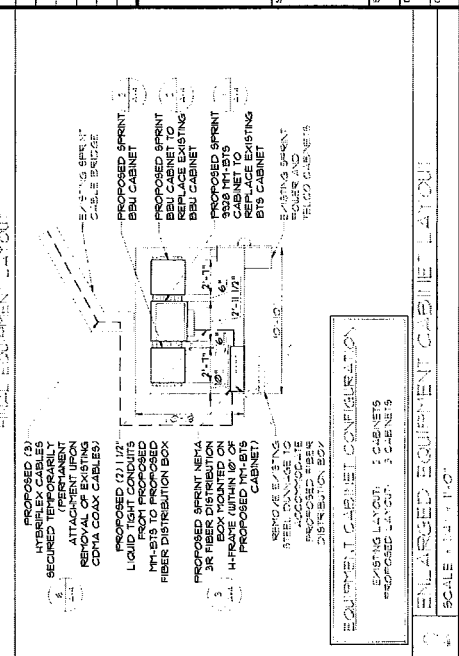
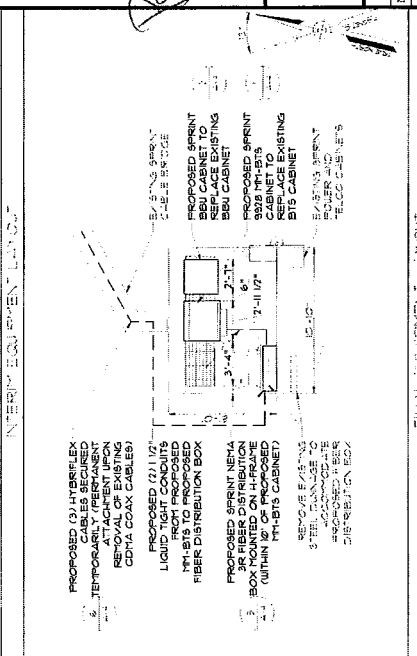
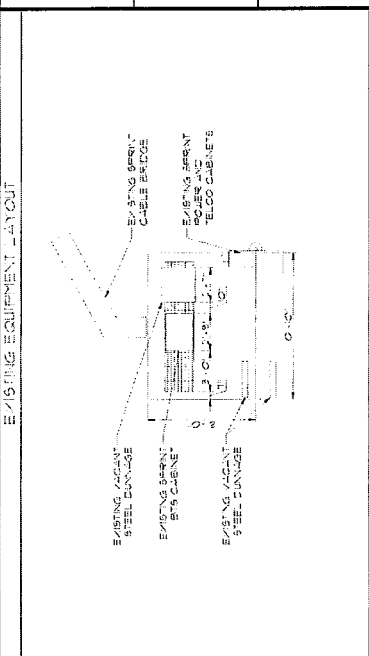
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SUBMITTALS		BY
NO	DATE	DESCRIPTION
1	2/24/10	PRELIMINARY
2	02/25/10	REVISED PER COMMENTS
3	02/27/10	ISSUED AS FINAL
		AD

SITE NUMBER:
CT03XC395
FAIRFIELD FIRE
DEPARTMENT
396 COGRESS STREET
FAIRFIELD, CT 06424

SHEET TITLE:
**ELEVATION 4
ENLARGED EQUIPMENT
CABINET LAYOUT**

SHEET NO.:
DATE:
DRAWN BY:
CHECKED BY:
SCALE: **A = 2**



ANTENNA CONFIGURATION NOTE
ALL EXISTING COAX ANTENNAS TO BE REMOVED. RE-PLACED WITH NEW WORK VISION ANTENNAS FOR FINAL CONFIGURATION. ANTENNA SEPARATION TO BE FIELD VERIFIED BY THE ORIGINAL CONTRACTOR.

PROPOSED SPRINT 932 MH-BTS CABINET MOUNTED ON PROPOSED PIPE MAST (TYP OF 1 PER SECTOR, TOTAL OF 3)
PROPOSED SPRINT 932 MH-BTS CABINET MOUNTED ON PROPOSED PIPE MAST (TYP OF 1 PER SECTOR, TOTAL OF 3)
PROPOSED SPRINT 932 MH-BTS CABINET MOUNTED ON PROPOSED PIPE MAST (TYP OF 1 PER SECTOR, TOTAL OF 3)

STRUCTURAL NOTE
SEE TOWER NOTES ON DRAWING. REINFORCEMENT WORK TO BE COMPLETED TEMPORARILY (PERMANENT REQUIRED) SHALL BE SECURED TO EXISTING MONOPOLE ANTENNAS. SEE SHEET 011.
REINFORCEMENT WORK TO BE COMPLETED TEMPORARILY (PERMANENT REQUIRED) SHALL BE SECURED TO EXISTING MONOPOLE ANTENNAS. SEE SHEET 011.
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PROPOSED FLAT ROOF MODIFICATIONS PER THE STRUCTURAL MODIFICATIONS OF MONOPOLE. SEE SHEET 011.
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PROPOSED SPRINT 932 MH-BTS CABINET TO BE PLACED WITHIN THE EXISTING SPRINT 932 MH-BTS CABINET.
PROPOSED SPRINT 932 MH-BTS CABINET TO BE PLACED WITHIN THE EXISTING SPRINT 932 MH-BTS CABINET.
PROPOSED SPRINT 932 MH-BTS CABINET TO BE PLACED WITHIN THE EXISTING SPRINT 932 MH-BTS CABINET.

NORTHEAST ELEVATION
SCALE: 1/8" = 1'-0"

November 16, 2012

Site No. CT03XC385
Fairfield Fire Department
Monopole Analysis
3965 Congress Street
Fairfield, CT 06824

Salient Associates, LLC has performed the tower analysis for the proposed Sprint antennas and equipment upgrade to be mounted on the existing monopole tower at the above referenced site. The proposed Sprint cabinets will be mounted on the existing concrete pad located on the ground at the above referenced site. The analysis was conducted using the IBC2003 w/ State Building Code 2005 Connecticut Supplement and TIA/EIA 222-F Structural Standards for Steel Antenna Towers and Antenna Supporting Structures. This analysis is based on the following load case:

Existing Tower Loading and Sprint Interim Equipment (Existing + Proposed)

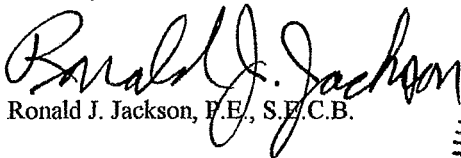
One (1) RFS multimodal antenna APXVSP18-C-A20 with (1) 1900MHz and (1) 800MHz RRH units per sector (Total of 3 antennas and 6 RRHs) will replace the existing CDMA antennas (Total of 6 antennas). The existing BTS equipment cabinets located on the existing concrete pad on the ground will be replaced with one (1) Alcatel-Lucent outdoor BTS equipment cabinet 9928 (1390 lbs.) and two (2) battery backup cabinets 60ECv2 (2830 lbs. each).

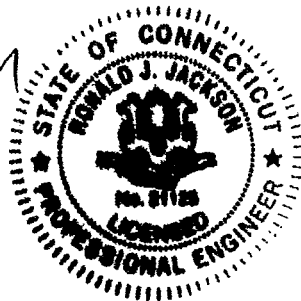
The structural analysis was performed without doing any tower mapping. We relied on the information found on Sprint Siterra (HEB Civil Engineers, P.A. previous structural analysis dated 1/9/98) and the information collected during the site audit.

Based on the results of our attached structural analysis, the existing 150' monopole does meet the requirements of TIA/EIA 222-F standards for basic wind speed of 85 mph and a wind speed of 74 mph used in combination with 0.5" of radial ice after the existing monopole shaft is reinforced (See modification drawings for details).

Please contact this office for any questions regarding this structural analysis.

Sincerely,


Ronald J. Jackson, P.E., S.E.C.B.



Section	1	2	3	4	5
Length (ft)	54.17	22.99	30.18	38.00	16.00
Number of Sides	12	12	12	12	12
Thickness (in)	0.2813	0.3750	0.5935	0.6397	0.7450
Socket Length (ft)	5.16	6.18	6.18	6.18	6.18
Top Dia (in)	23.6100	31.9673	36.0843	39.4385	46.6877
Bot Dia (in)	33.4690	36.0843	41.6440	46.6877	49.6000
Grade			A572-65		
Weight (lb)	4718.1	3176.8	6762.2	11299.4	6190.6

150.0 ft

95.8 ft

78.0 ft

47.8 ft

16.0 ft

0.0 ft

DESIGNED APPURTENANCE LOADING

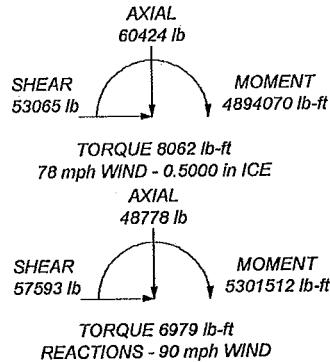
TYPE	ELEVATION	TYPE	ELEVATION
10' Dipole (Town)	149	7770.00 (ATI)	127
10' Dipole (Town)	149	P65-16-XLH-RR (ATI)	127
DB810K (Town)	149	(4) LGP 21401 TMA (ATI)	127
(4) DB844H90E-XY (Nextel)	149	(4) LGP 21401 TMA (ATI)	127
(4) DB844H90E-XY (Nextel)	149	(4) LGP 21401 TMA (ATI)	127
(4) DB844H90E-XY (Nextel)	149	Valmont 13' Low Profile Platform (ATI)	125
Valmont T-Arm (1) (Nextel)	149	APX16DWV-16DWVS-E (T-Mobile)	113
Valmont T-Arm (1) (Nextel)	149	APX16DWV-16DWVS-E (T-Mobile)	113
Valmont T-Arm (1) (Nextel)	149	APX16DWV-16DWVS-E (T-Mobile)	113
1800 MHz RRH (Sprint NV)	142	Valmont 13' Platform w/Rails (T-Mobile)	113
1900 MHz RRH (Sprint NV)	142		
1900 MHz RRH (Sprint NV)	142	(2) ATMAWSD-1A20 TMA (T-Mobile)	113
800 MHz RRH (Sprint NV)	142	(2) ATMAWSD-1A20 TMA (T-Mobile)	113
800 MHz RRH (Sprint NV)	142	(2) ATMAWSD-1A20 TMA (T-Mobile)	113
800 MHz RRH (Sprint NV)	142	4' - 6" Standoff Mount (Town)	104
RFS APXVSP18-C 800/1900 MHz (Sprint NV)	139	4' - 6" Standoff Mount (Town)	104
RFS APXVSP18-C 800/1900 MHz (Sprint NV)	139	4' - 6" Standoff Mount (Town)	104
RFS APXVSP18-C 800/1900 MHz (Sprint NV)	139	4' - 6" Standoff Mount (Town)	104
DB980H90E-M (Sprint CDMA)	139	1142-2B (Town)	104
DB980H90E-M (Sprint CDMA)	139	ASPA685 (Town)	104
DB980H90E-M (Sprint CDMA)	139	ASPA685 (Town)	104
Valmont 13' Platform w/Rails (Sprint CDMA)	139	ASPA685 (Town)	104
(2) RRUS 11 (ATI)	129	DB948F85T2E-M (VZW)	80
(2) RRUS 11 (ATI)	129	DB948F85T2E-M (VZW)	80
(2) RRUS 11 (ATI)	129	DB948F85T2E-M (VZW)	80
DC8-48-60-15-8F Surge Suppression Unit (ATI)	129	DB948F85T2E-M (VZW)	80
Valmont Uni-Tri Bracket (ATI)	129	DB846F65ZAXY (VZW)	80
7770.00 (ATI)	127	DB846F65ZAXY (VZW)	80
7770.00 (ATI)	127	DB844H80E-XY (VZW)	80
P65-16-XLH-RR (ATI)	127	DB844H80E-XY (VZW)	80
7770.00 (ATI)	127	DB844H80E-XY (VZW)	80
7770.00 (ATI)	127	Valmont 13' Low Profile Platform (VZW)	80
P65-16-XLH-RR (ATI)	127	GPS	40
7770.00 (ATI)	127	3' Side Mount Standoff (1)	40


MATERIAL STRENGTH

GRADE	Fy	Fu	GRADE	Fy	Fu
A572-65	65 ksi	80 ksi			

TOWER DESIGN NOTES

1. Tower is located in Fairfield County, Connecticut.
2. Tower designed for a 90 mph basic wind in accordance with the TIA/EIA-222-F Standard.
3. Tower is also designed for a 78 mph basic wind with 0.50 in ice.
4. Deflections are based upon a 60 mph wind.
5. Tower members are "hot dipped" galvanized in accordance with ASTM A123 and ASTM A153 Standards.
6. TOWER RATING: 99%



 Salient Associates LLC 15 New England Executive Park Burlington, MA 01803 Phone: (781) 791-5019 FAX: (781) 791-5018 Architecture Engineering	Job: CT03XC385 (Fairfield Fire Department); Fairfield, CT Project: 150' monopole	
	Client: Sprint/ Alcatel-Lucent Code: TIA/EIA-222-F Path:	Drawn by: sabed Date: 11/16/12 Scale: NTS Dwg No. E-1
	App'd:	

SALIENT ASSOCIATES <i>Salient Associates LLC</i> 15 New England Executive Park Burlington, MA 01803 Phone: (781) 791-5019 FAX: (781) 791-5018	Job CT03XC385 (Fairfield Fire Department); Fairfield, CT	Page 1 of 11
	Project 150' monopole	Date 11:12:31 11/16/12
	Client Sprint/ Alcatel-Lucent	Designed by sabad

Tower Input Data

There is a pole section.

This tower is designed using the TIA/EIA-222-F standard.

The following design criteria apply:

Tower is located in Fairfield County, Connecticut.

Basic wind speed of 90 mph.

Nominal ice thickness of 0.5000 in.

Ice density of 56 pcf.

A wind speed of 78 mph is used in combination with ice.

Temperature drop of 50 °F.

Deflections calculated using a wind speed of 60 mph.

Tower members are "hot dipped" galvanized in accordance with ASTM A123 and ASTM A153 Standards..

A non-linear (P-delta) analysis was used.

Pressures are calculated at each section.

Stress ratio used in pole design is 1.333.

Local bending stresses due to climbing loads, feedline supports, and appurtenance mounts are not considered.

Options

<ul style="list-style-type: none"> Consider Moments - Legs Consider Moments - Horizontals Consider Moments - Diagonals Use Moment Magnification √ Use Code Stress Ratios √ Use Code Safety Factors - Guys Escalate Ice Always Use Max Kz Use Special Wind Profile Include Bolts In Member Capacity Leg Bolts Are At Top Of Section Secondary Horizontal Braces Leg Use Diamond Inner Bracing (4 Sided) Add IBC .6D+W Combination 	<ul style="list-style-type: none"> Distribute Leg Loads As Uniform Assume Legs Pinned √ Assume Rigid Index Plate √ Use Clear Spans For Wind Area √ Use Clear Spans For KL/r Retention Guys To Initial Tension Bypass Mast Stability Checks √ Use Azimuth Dish Coefficients √ Project Wind Area of Appurt. Autocalc Torque Arm Areas SR Members Have Cut Ends Sort Capacity Reports By Component Triangulate Diamond Inner Bracing 	<ul style="list-style-type: none"> Treat Feedline Bundles As Cylinder Use ASCE 10 X-Brace Ly Rules Calculate Redundant Bracing Forces Ignore Redundant Members in FEA SR Leg Bolts Resist Compression All Leg Panels Have Same Allowable Offset Girt At Foundation √ Consider Feedline Torque Include Angle Block Shear Check Poles Include Shear-Torsion Interaction Always Use Sub-Critical Flow Use Top Mounted Sockets
--	--	--

Tapered Pole Section Geometry

Section	Elevation ft	Section Length ft	Splice Length ft	Number of Sides	Top Diameter in	Bottom Diameter in	Wall Thickness in	Bend Radius in	Pole Grade
L1	150.00-95.83	54.17	5.16	12	23.6100	33.4690	0.2813	1.1252	A572-65 (65 ksi)
L2	95.83-78.00	22.99	0.00	12	31.9673	36.0843	0.3750	1.5000	A572-65 (65 ksi)
L3	78.00-47.82	30.18	6.18	12	36.0843	41.6440	0.5335	2.1340	A572-65 (65 ksi)
L4	47.82-16.00	38.00	0.00	12	39.4385	46.6877	0.6397	2.5588	A572-65 (65 ksi)
L5	16.00-0.00	16.00		12	46.6877	49.6000	0.7450	2.9800	A572-65 (65 ksi)

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Tapered Pole Properties

Section	Tip Dia. in	Area in ²	I in ⁴	r in	C in	I/C in ³	J in ⁴	I/Q in ²	w in	w/I
L1	24.4429	21.1308	1467.8550	8.3517	12.2300	120.0211	2974.2723	10.3999	5.5736	19.814
	34.6497	30.0610	4226.1316	11.8812	17.3369	243.7645	8563.2885	14.7951	8.2158	29.207
L2	34.0516	38.1477	4859.7705	11.3100	16.5590	293.4813	9847.2127	18.7751	7.5622	20.166
	37.3572	43.1190	7018.0604	12.7839	18.6917	375.4647	14220.4930	21.2219	8.6656	23.108
L3	37.3572	61.0717	9851.9995	12.7272	18.6917	527.0798	19962.8219	30.0576	8.2408	15.447
	43.1130	70.6225	15234.7216	14.7176	21.5716	706.2400	30869.6763	34.7582	9.7308	18.24
L4	42.0503	79.9192	15355.8602	13.8900	20.4292	751.6638	31115.1358	39.3338	8.8551	13.843
	48.3347	94.8512	25671.4553	16.4852	24.1842	1061.4957	52017.3283	46.6829	10.7979	16.88
L5	48.3347	110.2119	29692.5597	16.4475	24.1842	1227.7654	60165.1760	54.2430	10.5157	14.115
	51.3497	117.1983	35704.6802	17.4901	25.6928	1389.6765	72347.3621	57.6814	11.2962	15.163

Tower Elevation	Gusset Area (per face)	Gusset Thickness	Gusset Grade	Adjust. Factor A _r	Adjust. Factor A _r	Weight Mult.	Double Angle Stitch Bolt Spacing Diagonals	Double Angle Stitch Bolt Spacing Horizontals
ft	ft ²	in					in	in
L1 150.00-95.83								
L2 95.83-78.00				1	1	1		
L3 78.00-47.82				1	1	1		
L4 47.82-16.00				1	1	1		
L5 16.00-0.00				1	1	1		

Feed Line/Linear Appurtenances - Entered As Area

Description	Face or Leg	Allow Shield	Component Type	Placement	Total Number	C _A A _A	Weight
				ft		ft ² /ft	k/ft
HB114-1-08U4-M5F (1 1/4") (Sprint NV)	C	No	Inside Pole	138.00 - 3.00	3	No Ice 1/2" Ice	0.00 0.00
LDF7-50A (1-5/8 FOAM) (Town)	A	No	Inside Pole	149.00 - 3.00	3	No Ice 1/2" Ice	0.00 0.00
LDF7-50A (1-5/8 FOAM) (Nextel)	B	No	Inside Pole	149.00 - 10.00	12	No Ice 1/2" Ice	0.00 0.00
LCF158-50J (1 5/8 FOAM) (Sprint)	C	No	Inside Pole	138.00 - 3.00	3	No Ice 1/2" Ice	0.00 0.00
LDF7-50A (1-5/8 FOAM) (AT&T)	A	No	Inside Pole	125.00 - 10.00	12	No Ice 1/2" Ice	0.00 0.00
LDF7-50A (1-5/8 FOAM) (T-Mobile)	A	No	CaAa (Out Of Face)	110.00 - 3.00	2	No Ice 1/2" Ice	0.20 0.30
LDF7-50A (1-5/8 FOAM) (T-Mobile)	A	No	CaAa (Out Of Face)	110.00 - 3.00	16	No Ice 1/2" Ice	0.20 0.30
LDF7-50A (1-5/8)	C	No	Inside Pole	77.00 - 10.00	2	No Ice	0.00

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Description	Face or Leg	Allow Shield	Component Type	Placement ft	Total Number	C _A A ₁ ft ² /ft	Weight klf
FOAM (VZW)						1/2" Ice 0.00	0.00
LDF7-50A (1-5/8)	C	No	Inside Pole	77.00 - 10.00	10	No Ice 1/2" Ice 0.00	0.00 0.00
FOAM (VZW) 7/8 (Town)	B	No	Inside Pole	104.00 - 3.00	4	No Ice 1/2" Ice 0.00	0.00 0.00
LDF4-50A (1/2 FOAM) (GPS)	B	No	Inside Pole	40.00 - 3.00	1	No Ice 1/2" Ice 0.00	0.00 0.00

Feed Line/Linear Appurtenances Section Areas

Tower Section	Tower Elevation ft	Face	A _R ft ²	A _F ft ²	C _A A ₁ In Face ft ²	C _A A ₁ Out Face ft ²	Weight lb
L1	150.00-95.83	A	0.000	0.000	0.000	50.502	626.98
		B	0.000	0.000	0.000	0.000	540.84
		C	0.000	0.000	0.000	0.000	280.85
L2	95.83-78.00	A	0.000	0.000	0.000	63.546	482.48
		B	0.000	0.000	0.000	0.000	213.96
		C	0.000	0.000	0.000	0.000	118.75
L3	78.00-47.82	A	0.000	0.000	0.000	107.562	816.67
		B	0.000	0.000	0.000	0.000	362.16
		C	0.000	0.000	0.000	0.000	488.13
L4	47.82-16.00	A	0.000	0.000	0.000	113.406	861.05
		B	0.000	0.000	0.000	0.000	385.44
		C	0.000	0.000	0.000	0.000	525.03
L5	16.00-0.00	A	0.000	0.000	0.000	46.332	282.90
		B	0.000	0.000	0.000	0.000	89.07
		C	0.000	0.000	0.000	0.000	145.62

Feed Line/Linear Appurtenances Section Areas - With Ice

Tower Section	Tower Elevation ft	Face or Leg	Ice Thickness in	A _R ft ²	A _F ft ²	C _A A ₁ In Face ft ²	C _A A ₁ Out Face ft ²	Weight lb
L1	150.00-95.83	A	0.500	0.000	0.000	0.000	76.007	1013.38
		B		0.000	0.000	0.000	0.000	540.84
		C		0.000	0.000	0.000	0.000	280.85
L2	95.83-78.00	A	0.500	0.000	0.000	0.000	95.639	968.69
		B		0.000	0.000	0.000	0.000	213.96
		C		0.000	0.000	0.000	0.000	118.75
L3	78.00-47.82	A	0.500	0.000	0.000	0.000	161.883	1639.65
		B		0.000	0.000	0.000	0.000	362.16
		C		0.000	0.000	0.000	0.000	488.13
L4	47.82-16.00	A	0.500	0.000	0.000	0.000	170.680	1728.75
		B		0.000	0.000	0.000	0.000	385.44
		C		0.000	0.000	0.000	0.000	525.03
L5	16.00-0.00	A	0.500	0.000	0.000	0.000	69.731	637.40
		B		0.000	0.000	0.000	0.000	89.07
		C		0.000	0.000	0.000	0.000	145.62

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Feed Line Center of Pressure

Section	Elevation	CP _x	CP _z	CP _x Ice	CP _z Ice
	ft	in	in	in	in
L1	150.00-95.83	0.0000	-1.1328	0.0000	-1.4604
L2	95.83-78.00	0.0000	-2.3865	0.0000	-2.7789
L3	78.00-47.82	0.0000	-2.5452	0.0000	-3.0000
L4	47.82-16.00	0.0000	-2.7004	0.0000	-3.2217
L5	16.00-0.00	0.0000	-2.5085	0.0000	-3.0850

Discrete Tower Loads

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert	Azimuth Adjustment	Placement	C _d A _f Front	C _d A _s Side	Weight	
			ft	°	ft	ft ²	ft ²	lb	
RFS APXVSPP18-C 800/1900 MHz (Sprint NV)	C	From Face	3.00	0.0000	139.00	No Ice	8.50	6.95	90.05
			0.00			1/2" Ice	9.15	8.13	155.24
			0.00						
RFS APXVSPP18-C 800/1900 MHz (Sprint NV)	B	From Face	3.00	0.0000	139.00	No Ice	8.50	6.95	90.05
			0.00			1/2" Ice	9.15	8.13	155.24
			0.00						
RFS APXVSPP18-C 800/1900 MHz (Sprint NV)	A	From Face	3.00	0.0000	139.00	No Ice	8.50	6.95	90.05
			0.00			1/2" Ice	9.15	8.13	155.24
			0.00						
1900 MHz RRH (Sprint NV)	C	From Face	0.50	0.0000	142.00	No Ice	2.89	2.83	59.50
			0.00			1/2" Ice	3.14	3.07	84.59
			0.00						
1900 MHz RRH (Sprint NV)	B	From Face	0.50	0.0000	142.00	No Ice	2.89	2.83	59.50
			0.00			1/2" Ice	3.14	3.07	84.59
			0.00						
1900 MHz RRH (Sprint NV)	A	From Face	0.50	0.0000	142.00	No Ice	2.89	2.83	59.50
			0.00			1/2" Ice	3.14	3.07	84.59
			0.00						
800 MHz RRH (Sprint NV)	C	From Face	0.50	0.0000	142.00	No Ice	2.40	2.25	64.00
			0.00			1/2" Ice	2.61	2.46	86.12
			0.00						
800 MHz RRH (Sprint NV)	B	From Face	0.50	0.0000	142.00	No Ice	2.40	2.25	64.00
			0.00			1/2" Ice	2.61	2.46	86.12
			0.00						
800 MHz RRH (Sprint NV)	A	From Face	0.50	0.0000	142.00	No Ice	2.40	2.25	64.00
			0.00			1/2" Ice	2.61	2.46	86.12
			0.00						
GPS	A	From Face	2.00	0.0000	40.00	No Ice	1.00	1.00	10.00
			0.00			1/2" Ice	1.50	1.50	15.00
			0.00						
3' Side Mount Standoff (1)	A	From Face	0.00	0.0000	40.00	No Ice	2.45	2.45	49.00
			0.00			1/2" Ice	3.89	3.89	75.00
			0.00						
10' Dipole (Town)	A	From Face	3.00	0.0000	149.00	No Ice	3.15	3.15	32.00
			0.00			1/2" Ice	5.67	5.67	42.00
			5.00						
10' Dipole (Town)	B	From Face	3.00	0.0000	149.00	No Ice	3.15	3.15	32.00
			0.00			1/2" Ice	5.67	5.67	42.00
			5.00						

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Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft	C _A A ₁ Front ft ²	C _A A ₁ Side ft ²	Weight lb
DB810K (Town)	C	From Face	5.00 3.00 0.00	0.0000	149.00	No Ice 4.08 1/2" Ice 5.73	4.08 5.73	35.00 65.18
(4) DB844H90E-XY (Nextel)	A	From Face	5.00 3.00 0.00	0.0000	149.00	No Ice 2.87 1/2" Ice 3.18	3.73 4.10	10.00 35.38
(4) DB844H90E-XY (Nextel)	B	From Face	3.00 0.00 0.00	0.0000	149.00	No Ice 2.87 1/2" Ice 3.18	3.73 4.10	10.00 35.38
(4) DB844H90E-XY (Nextel)	C	From Face	3.00 0.00 0.00	0.0000	149.00	No Ice 2.87 1/2" Ice 3.18	3.73 4.10	10.00 35.38
Valmont T-Arm (1) (Nextel)	A	None		0.0000	149.00	No Ice 10.54 1/2" Ice 14.45	10.54 14.45	336.00 412.00
Valmont T-Arm (1) (Nextel)	B	None		0.0000	149.00	No Ice 10.54 1/2" Ice 14.45	10.54 14.45	336.00 412.00
Valmont T-Arm (1) (Nextel)	C	None		0.0000	149.00	No Ice 10.54 1/2" Ice 14.45	10.54 14.45	336.00 412.00
DB980H90E-M (Sprint CDMA)	A	From Face	3.00 6.00 0.00	0.0000	139.00	No Ice 3.80 1/2" Ice 4.18	2.19 2.56	8.50 28.62
DB980H90E-M (Sprint CDMA)	B	From Face	3.00 6.00 0.00	0.0000	139.00	No Ice 3.80 1/2" Ice 4.18	2.19 2.56	8.50 28.62
DB980H90E-M (Sprint CDMA)	C	From Face	3.00 6.00 0.00	0.0000	139.00	No Ice 3.80 1/2" Ice 4.18	2.19 2.56	8.50 28.62
Valmont 13' Platform w/Rails (Sprint CDMA)	C	None		0.0000	139.00	No Ice 53.00 1/2" Ice 68.00	53.00 68.00	2000.00 3000.00
(2) RRUS 11 (AT&T)	A	From Face	0.50 0.00 0.00	0.0000	129.00	No Ice 2.94 1/2" Ice 3.17	1.19 1.35	55.00 74.32
(2) RRUS 11 (AT&T)	B	From Face	0.50 0.00 0.00	0.0000	129.00	No Ice 2.94 1/2" Ice 3.17	1.19 1.35	55.00 74.32
(2) RRUS 11 (AT&T)	C	From Face	0.50 0.00 0.00	0.0000	129.00	No Ice 2.94 1/2" Ice 3.17	1.19 1.35	55.00 74.32
DC6-48-60-15-8F Surge Suppression Unit (AT&T)	C	From Face	0.50 0.00 0.00	0.0000	129.00	No Ice 1.47 1/2" Ice 1.67	1.47 1.67	32.80 50.50
7770.00 (AT&T)	A	From Face	3.00 -6.00 0.00	0.0000	127.00	No Ice 5.99 1/2" Ice 6.45	4.26 4.91	67.95 114.64
7770.00 (AT&T)	A	From Face	3.00 2.00 0.00	0.0000	127.00	No Ice 5.99 1/2" Ice 6.45	4.26 4.91	67.95 114.64
P65-16-XLH-RR (AT&T)	A	From Face	3.00 6.00 0.00	0.0000	127.00	No Ice 8.40 1/2" Ice 8.95	4.70 5.15	29.00 76.28
7770.00 (AT&T)	B	From Face	3.00 -6.00 0.00	0.0000	127.00	No Ice 5.99 1/2" Ice 6.45	4.26 4.91	67.95 114.64
7770.00 (AT&T)	B	From Face	3.00 2.00 0.00	0.0000	127.00	No Ice 5.99 1/2" Ice 6.45	4.26 4.91	67.95 114.64

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Description	Face or Leg	Offset Type	Offsets:		Azimuth Adjustment	Placement	C _{A1} Front	C _{A1} Side	Weight	
			Horz	Vert						
			ft	ft	°	ft	ft ²	ft ²	lb	
P65-16-XLH-RR (AT&T)	B	From Face	3.00	0.00	0.0000	127.00	No Ice	8.40	4.70	29.00
			6.00	0.00			1/2" Ice	8.95	5.15	76.28
			0.00	0.00						
7770.00 (AT&T)	C	From Face	3.00	0.00	0.0000	127.00	No Ice	5.99	4.26	67.95
			-6.00	0.00			1/2" Ice	6.45	4.91	114.64
			0.00	0.00						
7770.00 (AT&T)	C	From Face	3.00	0.00	0.0000	127.00	No Ice	5.99	4.26	67.95
			2.00	0.00			1/2" Ice	6.45	4.91	114.64
			0.00	0.00						
P65-16-XLH-RR (AT&T)	C	From Face	3.00	0.00	0.0000	127.00	No Ice	8.40	4.70	29.00
			6.00	0.00			1/2" Ice	8.95	5.15	76.28
			0.00	0.00						
Valmont 13' Low Profile Platform (AT&T)	C	None			0.0000	125.00	No Ice	15.70	15.70	1300.00
							1/2" Ice	20.10	20.10	1765.00
Valmont Uni-Tri Bracket (AT&T)	C	None			0.0000	129.00	No Ice	1.75	1.75	290.00
							1/2" Ice	1.94	1.94	306.00
(4) LGP 21401 TMA (AT&T)	A	From Face	3.00	0.00	0.0000	127.00	No Ice	1.26	0.38	14.10
			0.00	0.00			1/2" Ice	1.42	0.49	21.23
			0.00	0.00						
(4) LGP 21401 TMA (AT&T)	B	From Face	3.00	0.00	0.0000	127.00	No Ice	1.26	0.38	14.10
			0.00	0.00			1/2" Ice	1.42	0.49	21.23
			0.00	0.00						
(4) LGP 21401 TMA (AT&T)	C	From Face	3.00	0.00	0.0000	127.00	No Ice	1.26	0.38	14.10
			0.00	0.00			1/2" Ice	1.42	0.49	21.23
			0.00	0.00						
APX16DWV-16DWVS-E (T-Mobile)	A	From Face	3.00	0.00	0.0000	113.00	No Ice	7.07	2.15	40.70
			6.00	0.00			1/2" Ice	7.52	2.49	73.65
			0.00	0.00						
APX16DWV-16DWVS-E (T-Mobile)	B	From Face	3.00	0.00	0.0000	113.00	No Ice	7.07	2.15	40.70
			6.00	0.00			1/2" Ice	7.52	2.49	73.65
			0.00	0.00						
APX16DWV-16DWVS-E (T-Mobile)	C	From Face	3.00	0.00	0.0000	113.00	No Ice	7.07	2.15	40.70
			6.00	0.00			1/2" Ice	7.52	2.49	73.65
			0.00	0.00						
Valmont 13' Platform w/Rails (T-Mobile)	C	None			0.0000	113.00	No Ice	53.00	53.00	2000.00
							1/2" Ice	68.00	68.00	3000.00
(2) ATMAWSD-1A20 TMA (T-Mobile)	A	From Face	3.00	0.00	0.0000	113.00	No Ice	0.85	0.27	8.40
			6.00	0.00			1/2" Ice	0.98	0.36	13.69
			0.00	0.00						
(2) ATMAWSD-1A20 TMA (T-Mobile)	B	From Face	3.00	0.00	0.0000	113.00	No Ice	0.85	0.27	8.40
			6.00	0.00			1/2" Ice	0.98	0.36	13.69
			0.00	0.00						
(2) ATMAWSD-1A20 TMA (T-Mobile)	C	From Face	3.00	0.00	0.0000	113.00	No Ice	0.85	0.27	8.40
			6.00	0.00			1/2" Ice	0.98	0.36	13.69
			0.00	0.00						
4' - 6" Standoff Mount (Town)	A	From Face	3.00	0.00	0.0000	104.00	No Ice	2.10	0.16	40.00
			0.00	0.00			1/2" Ice	2.48	0.21	57.00
			0.00	0.00						
4' - 6" Standoff Mount (Town)	A	From Face	3.00	0.00	0.0000	104.00	No Ice	2.10	0.16	40.00
			0.00	0.00			1/2" Ice	2.48	0.21	57.00
			0.00	0.00						
4' - 6" Standoff Mount (Town)	B	From Face	3.00	0.00	0.0000	104.00	No Ice	2.10	0.16	40.00
			0.00	0.00			1/2" Ice	2.48	0.21	57.00
			0.00	0.00						
4' - 6" Standoff Mount (Town)	C	From Face	3.00	0.00	0.0000	104.00	No Ice	2.10	0.16	40.00
			0.00	0.00			1/2" Ice	2.48	0.21	57.00
			0.00	0.00						

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	Project 150' monopole	Date 11:12:31 11/16/12
	Client Sprint/ Alcatel-Lucent	Designed by sabad

Description	Face or Leg	Offset Type	Offsets:		Azimuth Adjustment	Placement	C _v A ₁ Front	C _v A ₁ Side	Weight
			Horz	Vert					
			ft	ft	°	ft	ft ²	ft ²	lb
			0.00						
1142-2B (Town)	A	From Face	5.00		0.0000	104.00	No Ice 1.12	1.12	10.00
			0.00				1/2" Ice 2.54	2.54	21.20
			4.00						
ASPA685 (Town)	A	From Face	5.00		0.0000	104.00	No Ice 5.25	5.25	21.50
			0.00				1/2" Ice 7.38	7.38	60.30
			-10.50						
ASPA685 (Town)	B	From Face	5.00		0.0000	104.00	No Ice 5.25	5.25	21.50
			0.00				1/2" Ice 7.38	7.38	60.30
			10.50						
ASPA685 (Town)	C	From Face	5.00		0.0000	104.00	No Ice 5.25	5.25	21.50
			0.00				1/2" Ice 7.38	7.38	60.30
			-10.50						
DB948F85T2E-M (VZW)	A	From Face	3.00		0.0000	80.00	No Ice 1.92	3.26	8.50
			-4.00				1/2" Ice 2.22	3.62	27.57
			0.00						
DB948F85T2E-M (VZW)	A	From Face	3.00		0.0000	80.00	No Ice 1.92	3.26	8.50
			4.00				1/2" Ice 2.22	3.62	27.57
			0.00						
DB948F85T2E-M (VZW)	B	From Face	3.00		0.0000	80.00	No Ice 1.92	3.26	8.50
			-4.00				1/2" Ice 2.22	3.62	27.57
			0.00						
DB948F85T2E-M (VZW)	B	From Face	3.00		0.0000	80.00	No Ice 1.92	3.26	8.50
			4.00				1/2" Ice 2.22	3.62	27.57
			0.00						
DB948F85T2E-M (VZW)	C	From Face	3.00		0.0000	80.00	No Ice 1.92	3.26	8.50
			-4.00				1/2" Ice 2.22	3.62	27.57
			0.00						
DB948F85T2E-M (VZW)	C	From Face	3.00		0.0000	80.00	No Ice 1.92	3.26	8.50
			4.00				1/2" Ice 2.22	3.62	27.57
			0.00						
DB846F65ZAXY (VZW)	A	From Face	3.00		0.0000	80.00	No Ice 7.03	6.16	21.00
			-6.00				1/2" Ice 7.54	6.62	69.89
			0.00						
DB846F65ZAXY (VZW)	A	From Face	3.00		0.0000	80.00	No Ice 7.03	6.16	21.00
			6.00				1/2" Ice 7.54	6.62	69.89
			0.00						
DB844H80E-XY (VZW)	B	From Face	3.00		0.0000	80.00	No Ice 2.87	3.97	10.00
			-6.00				1/2" Ice 3.18	4.34	36.27
			0.00						
DB844H80E-XY (VZW)	B	From Face	3.00		0.0000	80.00	No Ice 2.87	3.97	10.00
			6.00				1/2" Ice 3.18	4.34	36.27
			0.00						
DB844H80E-XY (VZW)	C	From Face	3.00		0.0000	80.00	No Ice 2.87	3.97	10.00
			-6.00				1/2" Ice 3.18	4.34	36.27
			0.00						
DB844H80E-XY (VZW)	C	From Face	3.00		0.0000	80.00	No Ice 2.87	3.97	10.00
			6.00				1/2" Ice 3.18	4.34	36.27
			0.00						
Valmont 13' Low Profile Platform (VZW)	C	None			0.0000	80.00	No Ice 15.70	15.70	1300.00
							1/2" Ice 20.10	20.10	1765.00

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	Project 150' monopole	Date 11:12:31 11/16/12
	Client Sprint/ Alcatel-Lucent	Designed by sabad

Load Combinations

Comb. No.	Description
1	Dead Only
2	Dead+Wind 0 deg - No Ice
3	Dead+Wind 30 deg - No Ice
4	Dead+Wind 60 deg - No Ice
5	Dead+Wind 90 deg - No Ice
6	Dead+Wind 120 deg - No Ice
7	Dead+Wind 150 deg - No Ice
8	Dead+Wind 180 deg - No Ice
9	Dead+Wind 210 deg - No Ice
10	Dead+Wind 240 deg - No Ice
11	Dead+Wind 270 deg - No Ice
12	Dead+Wind 300 deg - No Ice
13	Dead+Wind 330 deg - No Ice
14	Dead+Ice+Temp
15	Dead+Wind 0 deg+Ice+Temp
16	Dead+Wind 30 deg+Ice+Temp
17	Dead+Wind 60 deg+Ice+Temp
18	Dead+Wind 90 deg+Ice+Temp
19	Dead+Wind 120 deg+Ice+Temp
20	Dead+Wind 150 deg+Ice+Temp
21	Dead+Wind 180 deg+Ice+Temp
22	Dead+Wind 210 deg+Ice+Temp
23	Dead+Wind 240 deg+Ice+Temp
24	Dead+Wind 270 deg+Ice+Temp
25	Dead+Wind 300 deg+Ice+Temp
26	Dead+Wind 330 deg+Ice+Temp
27	Dead+Wind 0 deg - Service
28	Dead+Wind 30 deg - Service
29	Dead+Wind 60 deg - Service
30	Dead+Wind 90 deg - Service
31	Dead+Wind 120 deg - Service
32	Dead+Wind 150 deg - Service
33	Dead+Wind 180 deg - Service
34	Dead+Wind 210 deg - Service
35	Dead+Wind 240 deg - Service
36	Dead+Wind 270 deg - Service
37	Dead+Wind 300 deg - Service
38	Dead+Wind 330 deg - Service

Maximum Tower Deflections - Service Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	150 - 95.83	47.635	37	2.7187	0.0039
L2	100.99 - 78	21.756	37	2.0938	0.0036
L3	78 - 47.82	12.774	37	1.5736	0.0029
L4	54 - 16	6.135	37	1.0564	0.0019
L5	16 - 0	0.505	37	0.3012	0.0005

Critical Deflections and Radius of Curvature - Service Wind

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Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	F _a ksi	A in ²	Actual P lb	Allow. P _a lb	Ratio P P _a
L1	150 - 95.83 (1)	TP33.469x23.61x0.2813	54.17	150.00	155.9	6.143	29.2103	-12099.70	179444.00	0.067
L2	95.83 - 78 (2)	TP36.0843x31.9673x0.375	22.99	150.00	140.8	7.532	43.1190	-18207.10	324791.00	0.056
L3	78 - 47.82 (3)	TP41.644x36.0843x0.5335	30.18	150.00	125.8	9.438	68.6668	-25291.80	648084.00	0.039
L4	47.82 - 16 (4)	TP46.6877x39.4385x0.6397	38.00	150.00	109.2	12.525	94.8512	-41394.60	1188060.00	0.035
L5	16 - 0 (5)	TP49.6x46.6877x0.745	16.00	150.00	102.9	14.099	117.1980	-48756.60	1652390.00	0.030

Pole Bending Design Data

Section No.	Elevation ft	Size	Actual M _x lb-ft	Actual f _{bx} ksi	Allow. F _{bx} ksi	Ratio f _{bx} /F _{bx}	Actual M _y lb-ft	Actual f _{by} ksi	Allow. F _{by} ksi	Ratio f _{by} /F _{by}
L1	150 - 95.83 (1)	TP33.469x23.61x0.2813	814053.33	-42.453	39.000	1.089	0.00	0.000	39.000	0.000
L2	95.83 - 78 (2)	TP36.0843x31.9673x0.375	1542075.00	-49.285	39.000	1.264	0.00	0.000	39.000	0.000
L3	78 - 47.82 (3)	TP41.644x36.0843x0.5335	2526850.00	-45.432	39.000	1.165	0.00	0.000	39.000	0.000
L4	47.82 - 16 (4)	TP46.6877x39.4385x0.6397	4407508.33	-49.826	39.000	1.278	0.00	0.000	39.000	0.000
L5	16 - 0 (5)	TP49.6x46.6877x0.745	5301508.33	-45.779	39.000	1.174	0.00	0.000	39.000	0.000

Pole Interaction Design Data

Section No.	Elevation ft	Size	Ratio P P _a	Ratio f _{bx} F _{bx}	Ratio f _{by} F _{by}	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
L1	150 - 95.83 (1)	TP33.469x23.61x0.2813	0.067	1.089	0.000	1.156	1.333	H1-3 ✓
L2	95.83 - 78 (2)	TP36.0843x31.9673x0.375	0.056	1.264	0.000	1.320	1.333	H1-3 ✓
L3	78 - 47.82 (3)	TP41.644x36.0843x0.5335	0.039	1.165	0.000	1.204	1.333	H1-3 ✓
L4	47.82 - 16 (4)	TP46.6877x39.4385x0.6397	0.035	1.278	0.000	1.312	1.333	H1-3 ✓
L5	16 - 0 (5)	TP49.6x46.6877x0.745	0.030	1.174	0.000	1.203	1.333	H1-3 ✓

Section Capacity Table

Section No.	Elevation ft	Component Type	Size	Critical Element	P lb	SF*P _{allow} lb	% Capacity	Pass Fail
L1	150 - 95.83	Pole	TP33.469x23.61x0.2813	1	-12099.70	239198.84	86.7	Pass
L2	95.83 - 78	Pole	TP36.0843x31.9673x0.375	2	-18207.10	432946.39	99.0	Pass
L3	78 - 47.82	Pole	TP41.644x36.0843x0.5335	3	-25291.80	863895.94	90.3	Pass
L4	47.82 - 16	Pole	TP46.6877x39.4385x0.6397	4	-41394.60	1583683.91	98.5	Pass
L5	16 - 0	Pole	TP49.6x46.6877x0.745	5	-48756.60	2202635.78	90.3	Pass

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Section No.	Elevation ft	Component Type	Size	Critical Element	P lb	SP*P _{allow} lb	% Capacity	Pass Fail	
							Summary		
							Pole (L2)	99.0	Pass
							RATING =	99.0	Pass

Program Version 5.4.2.0 - 6/17/2010 File:C:/Users/user/Documents/Projects/Alcatel-Lucent CT/CT03XC385 Monopole/Structural Calculations/Computer Files/Reinforced/CT03XC385 150' Monopole Analysis Reinf.eri

RADIO FREQUENCY EMISSIONS ANALYSIS REPORT
EVALUATION OF HUMAN EXPOSURE POTENTIAL
TO NON-IONIZING EMISSIONS

Sprint Existing Facility

Site ID: CT03XC385

Fairfield Fire Dept
3965 Congress Street
Fairfield, CT 06824

August 28, 2012

August 28, 2012

Sprint

Attn: RF Engineering Manager
1 International Boulevard, Suite 800
Mahwah, NJ 07495

Re: Emissions Values for Site **CT03XC385 – Fairfield Fire Dept**

EBI Consulting was directed to analyze the proposed upgrades to the existing Sprint facility located at 3965 Congress Street, Fairfield, CT, for the purpose of determining whether the emissions from the proposed Sprint equipment upgrades on this property are within specified federal limits.

All information used in this report was analyzed as a percentage of current Maximum Permissible Exposure (% MPE) as listed in the FCC OET Bulletin 65 Edition 97-01 and ANSI/IEEE Std C95.1. The FCC regulates Maximum Permissible Exposure in units of microwatts per square centimeter ($\mu\text{W}/\text{cm}^2$). The number of $\mu\text{W}/\text{cm}^2$ calculated at each sample point is called the power density. The exposure limit for power density varies depending upon the frequencies being utilized. Wireless Carriers and Paging Services use different frequency bands each with different exposure limits, therefore it is necessary to report results and limits in terms of percent MPE rather than power density.

All results were compared to the FCC (Federal Communications Commission) radio frequency exposure rules, 47 CFR 1.1307(b)(1) – (b)(3), to determine compliance with the Maximum Permissible Exposure (MPE) limits for General Population/Uncontrolled environments as defined below.

General population/uncontrolled exposure limits apply to situations in which the general public may be exposed or in which persons who are exposed as a consequence of their employment may not be made fully aware of the potential for exposure or cannot exercise control over their exposure. Therefore, members of the general public would always be considered under this category when exposure is not employment related, for example, in the case of a telecommunications tower that exposes persons in a nearby residential area.

Public exposure to radio frequencies is regulated and enforced in units of microwatts per square centimeter ($\mu\text{W}/\text{cm}^2$). The general population exposure limit for the cellular band is approximately $567 \mu\text{W}/\text{cm}^2$, and the general population exposure limit for the PCS band is $1000 \mu\text{W}/\text{cm}^2$. Because each carrier will be using different frequency bands, and each frequency band has different exposure limits, it is necessary to report percent of MPE rather than power density.

Occupational/controlled exposure limits apply to situations in which persons are exposed as a consequence of their employment and in which those persons who are exposed have been made fully aware of the potential for exposure and can exercise control over their exposure. Occupational/controlled exposure limits also apply where exposure is of a transient nature as a result of incidental passage through a location where exposure levels may be above general population/uncontrolled limits (see below), as long as the exposed person has been made fully aware of the potential for exposure and can exercise control over his or her exposure by leaving the area or by some other appropriate means.

Additional details can be found in FCC OET 65.

CALCULATIONS

Calculations were done for the proposed upgrades to the existing Sprint Wireless antenna facility located at 3965 Congress Street, Fairfield, CT, using the equipment information listed below. All calculations were performed per the specifications under FCC OET 65. All calculations were performed assuming the main lobe of the antenna was focused at the base of the tower to present a worst case scenario. Actual values seen from this site will be dramatically less than those shown in this report. For this report the sample point is the top of a 6 foot person standing at the base of the tower.

For all calculations, all emissions were calculated using the following assumptions:

- 1) 2 CDMA Carriers (1900 MHz) were considered for each sector of the proposed installation.
- 2) 1 CDMA Carrier (850 MHz) was considered for each sector of the proposed installation
- 3) All radios at the proposed installation were considered to be running at full power and were uncombined in their RF transmissions paths per carrier prescribed configuration. Per FCC OET Bulletin No. 65 - Edition 97-01 recommendations to achieve the maximum anticipated value at each sample point, all power levels emitting from the proposed antenna installation are increased by a factor of 2.56 to account for possible in-phase reflections from the surrounding environment. This is rarely the case, and if so, is never continuous.
- 4) For the following calculations the sample point was the top of a six foot person standing at the base of the tower. The actual gain in this direction was used per the manufactures supplied specifications.
- 5) The antenna used in this modeling is the RFS APXVSP18-C-A20. This is based on feedback from the carrier with regards to anticipated antenna selection. This antenna has a 15.9 dBd gain value at its main lobe at 1900 MHz and 13.4 dBd at its main lobe for 850 MHz. All calculations were performed assuming the main lobe of the antenna was focused at the base of the tower to present a worst case scenario.

- 6) The antenna mounting height centerline of the proposed antennas is **138.4 feet** above ground level (AGL)
- 7) Emissions values for additional carriers were taken from the Connecticut Siting Council active database. Values in this database are provided by the individual carriers themselves.

All calculation were done with respect to uncontrolled / general public threshold limits

Site ID	CT03XC385 - Fairfield Fire Dept
Site Address	3965 Congress Street, Fairfield, CT 06824
Site Type	Monopole

Sector 1																	
Antenna Number	Antenna Make	Antenna Model	Radio Type	Frequency Band	Technology	Power Out Per Channel (Watts)	Number of Channels	Composite Power	Antenna Gain in direction of sample point (dbd)	Antenna Height (ft)	analysis height	Cable Size	Cable Loss (dB)	Additional Loss	ERP	Power Density Value	Power Density Percentage
1a	RFS	APXVSP18-C-A20	RRH	1900 MHz	CDMA / LTE	20	2	40	15.9	138.4	132.4	1/2 "	0.5	0	1386.9474	28.44396	2.84440%
1a	RFS	APXVSP18-C-A20	RRH	850 MHz	CDMA / LTE	20	1	20	13.4	138.4	132.4	1/2 "	0.5	0	389.96892	7.997606	1.41051%
Sector total Power Density Value:													4.255%				

Sector 2																	
Antenna Number	Antenna Make	Antenna Model	Radio Type	Frequency Band	Technology	Power Out Per Channel (Watts)	Number of Channels	Composite Power	Antenna Gain in direction of sample point (dbd)	Antenna Height (ft)	analysis height	Cable Size	Cable Loss (dB)	Additional Loss	ERP	Power Density Value	Power Density Percentage
2a	RFS	APXVSP18-C-A20	RRH	1900 MHz	CDMA / LTE	20	2	40	15.9	138.4	132.4	1/2 "	0.5	0	1386.9474	28.44396	2.84440%
2a	RFS	APXVSP18-C-A20	RRH	850 MHz	CDMA / LTE	20	1	20	13.4	138.4	132.4	1/2 "	0.5	0	389.96892	7.997606	1.41051%
Sector total Power Density Value:													4.255%				

Sector 3																	
Antenna Number	Antenna Make	Antenna Model	Radio Type	Frequency Band	Technology	Power Out Per Channel (Watts)	Number of Channels	Composite Power	Antenna Gain in direction of sample point (dbd)	Antenna Height (ft)	analysis height	Cable Size	Cable Loss (dB)	Additional Loss	ERP	Power Density Value	Power Density Percentage
3a	RFS	APXVSP18-C-A20	RRH	1900 MHz	CDMA / LTE	20	2	40	15.9	138.4	132.4	1/2 "	0.5	0	1386.9474	28.44396	2.84440%
3a	RFS	APXVSP18-C-A20	RRH	850 MHz	CDMA / LTE	20	1	20	13.4	138.4	132.4	1/2 "	0.5	0	389.96892	7.997606	1.41051%
Sector total Power Density Value:													4.255%				

Site Composite MPE %	
Carrier	MPE %
Sprint	12.765%
AT&T	16.000%
T-Mobile	8.780%
Sprint MW	4.840%
Nextel	4.690%
Town	1.180%
Verizon Wireless	31.310%
Total Site MPE %	79.565%

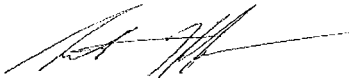
Summary

All calculations performed for this analysis yielded results that were well within the allowable limits for general public exposure to RF Emissions.

The anticipated Maximum Composite contributions from the Sprint facility are **12.765% (4.255% from each sector)** of the allowable FCC established general public limit considering all three sectors simultaneously sampled at the ground level.

The anticipated composite MPE value for this site assuming all carriers present is **79.565%** of the allowable FCC established general public limit sampled at the ground level. This is based upon values listed in the Connecticut Siting Council database for existing carrier emissions

FCC guidelines state that if a site is found to be out of compliance (over allowable thresholds), that carriers over a 5% contribution to the composite value will require measures to bring the site into compliance. For this facility, the composite values calculated were well within the allowable 100% threshold standard per the federal government



Scott Heffernan
RF Engineering Director

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