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@po.state.ct.us
www.ct.gov/csc

May 12, 2005

Kenneth C. Baldwin, Esq.
Robinson & Cole LLP
280 Trumbull Street
Hartford, CT 06103-3597

RE: **EM-VER-027-038-076-083-050318** - Cellco Partnership d/b/a Verizon Wireless notice of intent to modify existing telecommunications facilities located at 48 Cow Hill Road, Clinton; 101 R. Old Blue Hills Road, Durham; 864 Opening Hill Road, Madison; and Court Street, Middletown, Connecticut. Durham Site.

Dear Attorney Baldwin:

At a public meeting held on May 11, 2005, the Connecticut Siting Council (Council) acknowledged your notice to modify the existing telecommunications facility in Durham, pursuant to Section 16-50j-73 of the Regulations of Connecticut State Agencies. The Clinton, Madison, and Middletown proposals in this notice of exempt modification were previously acknowledged by the Council on April 19, 2005.

The proposed modifications are to be implemented as specified here and in your notice dated March 18, 2005, including the placement of all necessary equipment and shelters within the tower compound. 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. 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. Any deviation from this format may result in the Council implementing enforcement proceedings pursuant to General Statutes § 16-50u including, without limitation, imposition of expenses resulting from such failure and of civil penalties in an amount not less than one thousand dollars per day for each day of construction or operation in material violation.

Thank you for your attention and cooperation.

Very truly yours,

Pamela B. Katz, P.E.
Chairman

PBK/laf

c: The Honorable Maryann P. Boord, First Selectman, Town of Durham
Geoffrey Colegrove, Town Planner, Town of Durham
John W. Knuff, Esq., Hurwitz Sagarin & Slossberg LLC
Thomas F. Flynn III, Nextel Communications Inc.
Christopher B. Fisher, Esq., Cuddy & Feder LLP
Thomas J. Regan, Esq., Brown Rudnick Berlack Israels LLP

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April 21, 2005

Kenneth C. Baldwin, Esq.
Robinson & Cole LLP
280 Trumbull Street
Hartford, CT 06103-3597

RE: **EM-VER-027-038-076-083-050318** -Cellco Partnership d/b/a Verizon Wireless notice of intent to modify existing telecommunications facilities located at 48 Cow Hill Road, Clinton; 101 R. Old Blue Hills Road, Durham; 864 Opening Hill Road, Madison; and Court Street, Middletown, Connecticut.

Dear Attorney Baldwin:

At a public meeting held on April 19, 2005, the Connecticut Siting Council (Council) acknowledged your notice to modify three of the existing telecommunications facilities located in Clinton, Madison, and Middletown, Connecticut, pursuant to Section 16-50j-73 of the Regulations of Connecticut State Agencies. The 101 R Old Blue Hills Road, Durham proposal has been tabled pending the outcome of Nextel Petition No. 697 for this same site.

The proposed modifications are to be implemented as specified here and in your notice dated March 18, 2005, including the placement of all necessary equipment and shelters within the tower compounds. 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 existing facility sites that would not increase tower heights, extend the boundaries of the tower sites, increase noise levels at the tower site boundaries by six decibels, and increase the total radio frequencies electromagnetic radiation power densities measured at the tower site boundaries to or above the standard adopted by the State Department of Environmental Protection pursuant to General Statutes § 22a-162. These facilities have also been carefully modeled to ensure that radio frequency emissions are conservatively below State and federal standards applicable to the frequencies now used on these towers.

This decision is under the exclusive jurisdiction of the Council. Any additional change to any of these facilities 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. Any deviation from this format may result in the Council implementing enforcement proceedings pursuant to General Statutes § 16-50u including, without limitation, imposition of expenses resulting from such failure and of civil penalties in an amount not less than one thousand dollars per day for each day of construction or operation in material violation.

Thank you for your attention and cooperation.

Very truly yours,

Pamela B. Katz, P.E.
Chairman

PBK/laf

c: See Attached List

Recipient List:

The Honorable James M. McCusker, Jr., First Selectman, Town of Clinton
Thomas Lane, Zoning Enforcement Officer, Town of Clinton
The Honorable Maryann P. Boord, First Selectman, Town of Durham
Geoffrey Colegrove, Town Planner, Town of Durham
The Honorable Thomas S. Scarpati, First Selectman, Town of Madison
Marilyn M. Ozols, Planning & Zoning Administrator, Town of Madison
The Honorable Domenique S. Thornton, Mayor, City of Middletown
William Warner, AICP Director, City of Middletown
Thomas J. Regan, Brown Rudnick Berlack Israels, LLP
Stephen J. Humes, Esq., McCarter & English LLP
Christopher B. Fisher, Esq., Cuddy & Feder, LLP
Thomas F. Flynn III, Nextel Communications
Jeffrey W. Barbadora, Crown Atlantic Company LLC

STATE OF CONNECTICUT

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www.ct.gov/csc

March 21, 2005

The Honorable James M. McCusker, Jr.
First Selectman
Town of Clinton
54 East Main Street
Clinton, CT 06413

RE: **EM-VER-027-038-076-083-050318** – Cellco Partnership d/b/a Verizon Wireless notice of intent to modify an existing telecommunications facility located at 48 Cow Hill Road, Clinton; 101 R. Old Blue Hills Road, Durham; 864 Opening Hill Road, Madison; and Court Street, Middletown, Connecticut.

Dear Mr. McCusker:

The Connecticut Siting Council (Council) received this request to modify an existing telecommunications facility, pursuant to Regulations of Connecticut State Agencies Section 16-50j-72.

The Council will consider this item at the next meeting scheduled for April 19, 2005 at 1:30 p.m. in Hearing Room One, Ten Franklin Square, New Britain, Connecticut.

If you have any questions or comments regarding this proposal, please call me or inform the council by April 18, 2005.

Thank you for your cooperation and consideration.

Very truly yours,

S. Derek Phelps
Executive Director

SDP/cm

Enclosure: Notice of Intent

c: Thomas Lane, Zoning Enforcement Officer, Town of Clinton

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@po.state.ct.us
www.ct.gov/csc

March 21, 2005

The Honorable Maryann P. Boord
First Selectman
Town of Durham
3 Town House Road
Durham, CT 06422-0428

RE: **EM-VER-027-038-076-083-050318** – Cellco Partnership d/b/a Verizon Wireless notice of intent to modify an existing telecommunications facility located at 48 Cow Hill Road, Clinton; 101 R. Old Blue Hills Road, Durham; 864 Opening Hill Road, Madison; and Court Street, Middletown, Connecticut.

Dear Ms. Boord:

The Connecticut Siting Council (Council) received this request to modify an existing telecommunications facility, pursuant to Regulations of Connecticut State Agencies Section 16-50j-72.

The Council will consider this item at the next meeting scheduled for April 19, 2005 at 1:30 p.m. in Hearing Room One, Ten Franklin Square, New Britain, Connecticut.

If you have any questions or comments regarding this proposal, please call me or inform the council by April 18, 2005.

Thank you for your cooperation and consideration.

Very truly yours,

S. Derek Phelps
Executive Director

SDP/cm

Enclosure: Notice of Intent

c: Geoffrey Colegrove, Town Planner, Town of Durham

STATE OF CONNECTICUT

CONNECTICUT SITING COUNCIL

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www.ct.gov/csc

March 21, 2005

The Honorable Thomas S. Scarpati
First Selectman
Town of Madison
8 Campus Drive
Madison, CT 06443-2563

RE: **EM-VER-027-038-076-083-050318** – Cellco Partnership d/b/a Verizon Wireless notice of intent to modify an existing telecommunications facility located at 48 Cow Hill Road, Clinton; 101 R. Old Blue Hills Road, Durham; 864 Opening Hill Road, Madison; and Court Street, Middletown, Connecticut.

Dear Mr. Scarpati:

The Connecticut Siting Council (Council) received this request to modify an existing telecommunications facility, pursuant to Regulations of Connecticut State Agencies Section 16-50j-72.

The Council will consider this item at the next meeting scheduled for April 19, 2005 at 1:30 p.m. in Hearing Room One, Ten Franklin Square, New Britain, Connecticut.

If you have any questions or comments regarding this proposal, please call me or inform the council by April 18, 2005.

Thank you for your cooperation and consideration.

Very truly yours,

S. Derek Phelps
Executive Director

SDP/cm

Enclosure: Notice of Intent

c: Marilyn M. Ozols, Planning & Zoning Administrator, Town of Madison

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@po.state.ct.us
www.ct.gov/csc

March 21, 2005

The Honorable Domenique S. Thornton
Mayor
City of Middletown
245 Dekoven Drive and Court Street
Middletown, CT 06457

RE: **EM-VER-027-038-076-083-050318** – Cellco Partnership d/b/a Verizon Wireless notice of intent to modify an existing telecommunications facility located at 48 Cow Hill Road, Clinton; 101 R. Old Blue Hills Road, Durham; 864 Opening Hill Road, Madison; and Court Street, Middletown, Connecticut.

Dear Mayor Thornton:

The Connecticut Siting Council (Council) received this request to modify an existing telecommunications facility, pursuant to Regulations of Connecticut State Agencies Section 16-50j-72.

The Council will consider this item at the next meeting scheduled for April 19, 2005 at 1:30 p.m. in Hearing Room One, Ten Franklin Square, New Britain, Connecticut.

If you have any questions or comments regarding this proposal, please call me or inform the council by April 18, 2005.

Thank you for your cooperation and consideration.

Very truly yours,

S. Derek Phelps
Executive Director

SDP/cm

Enclosure: Notice of Intent

c: William Warner, AICP Director, City of Middletown

All the best!

ROBINSON & COLE LLP

KENNETH C. BALDWIN

280 Trumbull Street
Hartford, CT 06103-3597
Main (860) 275-8200
Fax (860) 275-8299
kbaldwin@rc.com
Direct (860) 275-8345

EM-VER-027-038-076-083-050318

March 18, 2005

Via Hand Delivery

S. Derek Phelps
Executive Director
Connecticut Siting Council
10 Franklin Square
New Britain, CT 06051

Re: **Notice of Exempt Modification – Antenna Swap**
48 Cow Hill Road, Clinton, CT
101 R Old Blue Hills Road, Durham, CT
864 Opening Hill Road, Madison, CT
Court Street, Middletown, CT

Dear Mr. Phelps:

Cellco Partnership d/b/a Verizon Wireless ("Cellco") currently maintains a wireless telecommunications facility at each of the sites referenced above. As described below, Cellco now intends to modify each facility.

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 chief elected or appointed official in each affected municipality.

Clinton Facility- 48 Cow Hill Road

Cellco's existing Cow Hill Road facility consists of twelve (12) cellular antennas on a tower owned by the Crown Atlantic Company, LLC. Cellco now intends to modify its facility by removing three (3) cellular antennas and installing six (6) PCS antennas, for a total of fifteen (15) antennas, at the same level on the tower. Attached behind Tab 1 are specifications for the existing cellular antennas and the proposed PCS antennas for the facility; a new general power density table; and a structural analysis confirming that the tower can support the existing and proposed antennas and related equipment.

Durham Facility- 101 R Old Blue Hills Road

Cellco's existing Old Blue Hills Road facility consists of twelve (12) cellular antennas on a tower owned by Crown Atlantic Company, LLC. Cellco now intends to modify its facility by removing three (3) cellular antennas and installing six (6) PCS antennas, for a total of fifteen (15) antennas, at the same level on the tower. Attached behind Tab 2 are specifications for the existing cellular antennas and the proposed PCS antennas for the facility; a new general power density table; and a structural analysis confirming that the tower can support the existing and proposed antennas and related equipment.[1]

Madison Facility- 864 Opening Hill Road

Cellco's existing Opening Hill Road facility consists of twelve (12) cellular antennas on a tower owned by Crown Atlantic Company, LLC. Cellco now intends to modify its facility by replacing six (6) cellular antennas with six (6) PCS antennas at the same level on the tower. Attached behind Tab 3 are specifications for the existing cellular antennas and the proposed PCS antennas for the facility and a new general power density table.

Middletown Facility- Court Street

Cellco's existing Court Street facility consists of twelve (12) roof-top mounted cellular antennas on building owned by Middlesex Mutual Assurance. The Council approved this facility in Docket No. 125 and maintains jurisdiction. Cellco now intends to modify its facility by replacing six (6) cellular antennas with six (6) PCS antennas at the same level above ground. Attached behind Tab 4 are specifications for the existing cellular antennas and the proposed PCS antennas for the facility and a new general power density table.

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

1. The proposed modifications will not result in any increase in the overall height of the existing structure. Cellco's replacement antennas will be mounted at the same level on the tower.

[1] The Old Blue Hills Road facility is the subject of a pending Council Petition No. 697 through which Nextel is seeking permission to extend the existing tower by twenty-feet. Also included behind Tab 2 is a structural letter confirming that the tower, if extended, could support the modifications described in this filing by Cellco.

2. The proposed modifications will not affect ground-mounted equipment and will not require the extension of the site boundaries.

3. The proposed modifications will not increase noise levels at the facility by six decibels or more.

4. The proposed modifications will not result in radio frequency (RF) power density levels at the facility that exceed the Federal Communications Commission (FCC) adopted safety standard.

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

Sincerely,

Kenneth C. Baldwin

Enclosures

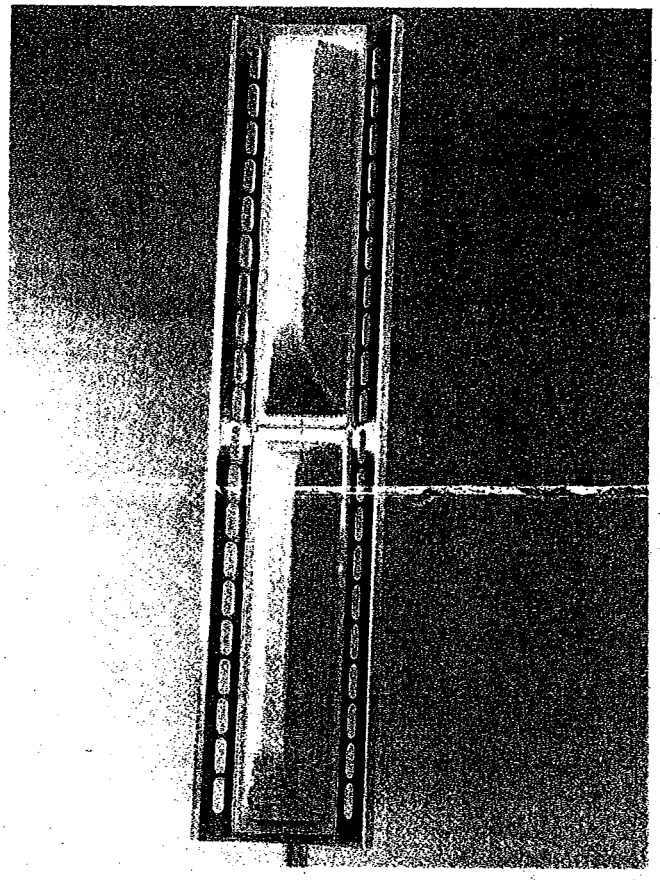
cc: James M. McCusker, Jr., Town of Clinton First Selectman
Maryann P. Boord, Town of Durham First Selectwoman
Thomas S. Scarpati, Town of Madison First Selectman
Domenique S. Thornton, Town of Middletown Mayor
Sandy M. Carter

Swedcom Corporation

ALP 9212-N

Log-Periodic Reflector Antenna

92 Degrees 12 dBd



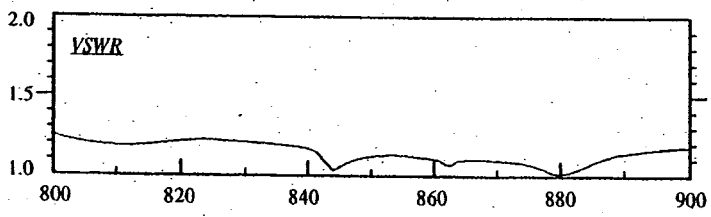
Features:

- ❑ **Broadbanded. (800-900 MHz)**
- ❑ **Low backlobe radiation. Front-to-back ratio better than 28 dB**
- ❑ **Low Intermodulation Products.**
- ❑ **Low Wind-load.**
- ❑ **Low weight.**
- ❑ **Small size.**
- ❑ **Rugged design.**

Please see the following pages including radiation patterns/tables for *ALP 9212-N.*

Electrical Specifications:

Frequency range:	806-896 MHz
Impedance:	50 ohm
Connector:	N-female or 7/8" EIA
VSWR:	Typ. 1.3:1 max 1.5:1
Polarization:	Vertical
Gain:	12 dBd
Front to back ratio:	>28 dB
Side-lobe supression:	>18 dB
Intermodulation: (2x25W):	IM3 >146 dB
	IM5 >153 dB
	IM7 & IM9 >163 dB
Power Rating:	500 W
H-Plane: -3 dB	95 °
E-Plane: -3 dB	15 °
Lightning Protection:	DC Grounded



Mechanical Specifications:

Overall Height:	52 in	(1320 mm)
Width:	11.4 in	(290 mm)
Depth:	11.4 in	(290 mm)
Weight including brackets:	26.7 lbs	(12 Kg)
Rated wind velocity:	113 mph	(180 Km/h)
Wind Area (CxA/Front):	3.9 sq.ft	(0.36 sq.m)
Lateral thrust at rated wind		
Worst case:	570 N	

Materials:

Radiating elements:	Aluminum
Element housing:	Grey PVC
Back-plate:	Aluminum
Mounting hardware	
clamps:	Hot dip galvanized steel
bolts:	Stainless steel

*Manufactured by: **Allgon System AB***

DECIBEL
Base Station Antennas

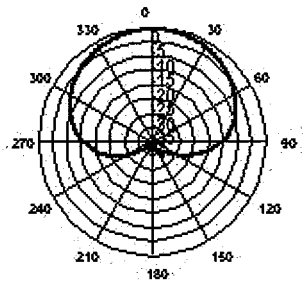
948F85T2E-M

16.1 dBi, Directed Dipole Antenna
1850-1990 MHz

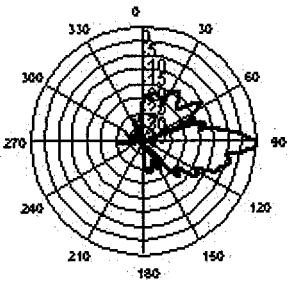
1850-1990 MHz
MaxFill™
dB Director®

85°

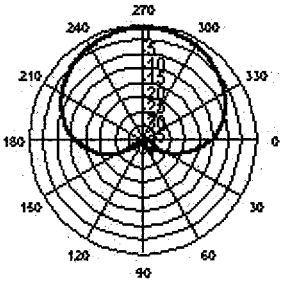
- Exceptional azimuth roll-off reducing soft hand-offs and improving capacity
- Excellent upper side lobe suppression
- Deep null filling below the horizon assures improved signal intensity
- Low profile appearance and low wind loading profile for easier zoning approvals



Azimuth 1850 MHz (Tilt=2)



Vertical 1850 MHz (Tilt=2)



Horizontal 1850 MHz (Tilt=2)

ELECTRICAL	
Frequency (MHz):	1850-1990
Polarization:	Vertical
Gain (dBd/dBi):	14/16.1
Azimuth BW:	85°
Elevation BW:	8°
Beam Tilt:	2°
USLS* (dB):	>18
Null Fill* (dB):	15
Front-to-Back Ratio* (dB):	40
VSWR:	<1.33:1
IM Suppression - Two 20 Watt Carriers:	-150 dBc
Impedance:	50 Ohms
Max Input Power:	250 Watts
Lightning Protection:	DC Ground
Opt Electrical Tilt:	0°,4°,6°

MECHANICAL	
Weight:	8.5 lbs (3.9 kg)
Dimensions (LxWxD):	48 X 3.5 X 7 in (1219 X 89 X 178 mm)
Max. Wind Area:	1.18 ft² (0.11 m²)
Max. Wind Load (@ 100mph):	65 lbf (289 N)
Max. Wind Speed:	125 mph (201 km/h)
Radiator Material:	Low Loss Circuit Board
Reflector Material:	Aluminum
Radome Material:	ABS, UV Resistant
Mounting Hardware Material:	Galvanized Steel
Connector Type:	7-16 DIN - Female (Bottom)
Color:	Light Gray
Standard Mounting Hardware:	DB390 Pipe Mount Kit, included
Downtilt Mounting Hardware:	DB5098, optional
Opt. Mounting Hardware:	DB5094-AZ Azimuth Wall Mount

Andrew Corporation
8635 Stemmons Freeway
Dallas, Texas U.S.A 75247-3701
Tel: 214.631.0310

Fax: 214.631.4706
Toll Free Tel: 1.800.676.5342
Fax: 1.800.229.4706
www.andrew.com

dbtech@andrew.com

Date: 4/29/2004
* - Indicates Typical Values

General Power Density

Site Name: Clinton, CT
Tower Height: 210 FT

Operator	Operating Frequency	Number of Trans.	ERP Per Trans.	Total ERP	Distance to Target	Calculated Power Density	Maximum Permissable Exposure*	Fraction of MPE
	(MHz)		(watts)	(watts)	(feet)	(mW/cm^2)	(mW/cm^2)	(%)
Verizon	880	9	200	1800	210	0.0147	0.586	2.50%
Verizon	1900	3	200	600	210	0.0049	1	0.49%
Total Percentage of Maximum Permissible Exposure								**2.99%**

*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^2 = milliwatts per square centimeter
ERP = Effective Radiated Power

February 21, 2005

Steve Tuttle
Crown Castle International
500 West Cummings Park, Suite 3400
Woburn, MA 01801
(781) 729-4406

Vertical Structures, Inc.
309 Spangler Drive, Suite E
Richmond, KY 40475
(859) 624-8360
caseltyne@verticalstructures.com

Subject: **Structural Analysis Report**

Carrier Designation	**Verizon Wireless Change-Out** **Carrier Site Number: HRT 105** **Carrier Site Name: Clinton**
Crown Castle Designation	**Crown Castle BU Number: 806363** **Crown Castle Site Name: HRT 105** **Crown Castle JDE Job Number: 59074**
Engineering Firm Designation	**Vertical Structures Project Number: 2005-004-013**
Site Data	**48 Cow Hill Road, Clinton, CT, Middlesex County** **Latitude 41°-17'-20.0", Longitude -72°-32'-18.0".** **212' Rohn SSMW Self-Supporting Tower**

Dear Mr. Tuttle,

Vertical Structures is pleased to submit this structural analysis report to determine the structural integrity of the aforementioned tower. This analysis has been performed in accordance with the Crown Castle Structural 'Statement of Work' and the terms of Crown Castle Purchase Order Number 173036. The purpose of the analysis is to determine the suitability of the tower upon replacing three (3) existing Swedcom ALP 9212-N panel antennas mounted on three (3) existing sector frames at 208' with six (6) proposed Decibel DB948F85T2E-M panel antennas for Verizon Wireless when combined with the existing and reserved equipment on the structure. This analysis has been performed in accordance with the TIA/EIA 222-F standard and local code requirements based upon a wind speed condition of 85 MPH.

Based on our analysis we have determined the tower superstructure and foundation are sufficient for the proposed loading.

Vertical Structures appreciates the opportunity of providing our continuing professional services to you and Crown Castle International. If you have any questions or need further assistance on this or any other projects please give us a call.

Respectfully submitted,

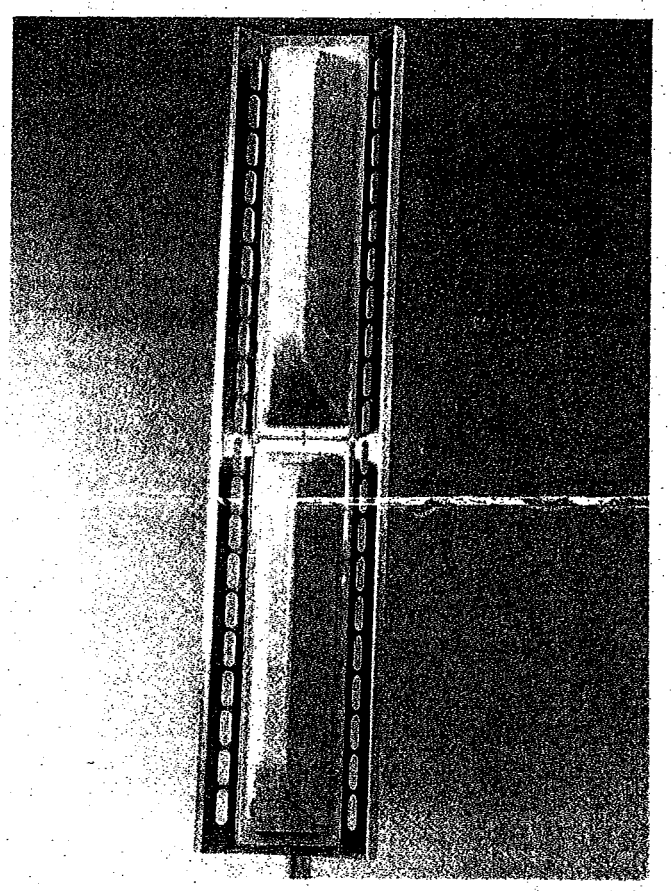
Craig Aseltyne
Project Engineer

Swedcom Corporation

ALP 9212-N

Log-Periodic Reflector Antenna

92 Degrees 12 dBd



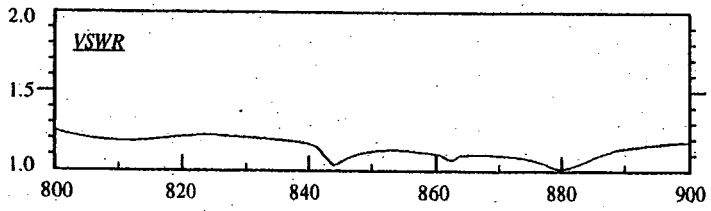
Features:

- ❑ **Broadbanded. (800-900 MHz)**
- ❑ **Low backlobe radiation. Front-to-back ratio better than 28 dB**
- ❑ **Low Intermodulation Products.**
- ❑ **Low Wind-load.**
- ❑ **Low weight.**
- ❑ **Small size.**
- ❑ **Rugged design.**

Please see the following pages including radiation patterns/tables for *ALP 9212-N.*

Electrical Specifications:

Frequency range:	806-896 MHz
Impedance:	50 ohm
Connector:	N-female or 7/8" EIA
VSWR:	Typ. 1.3:1 max 1.5:1
Polarization:	Vertical
Gain:	12 dBd
Front to back ratio:	>28 dB
Side-lobe supression:	>18 dB
Intermodulation: (2x25W):	IM3 >146 dB
	IM5 >153 dB
	IM7 & IM9 >163 dB
Power Rating:	500 W
H-Plane: -3 dB	95 °
E-Plane: -3 dB	15 °
Lightning Protection:	DC Grounded



Mechanical Specifications:

Overall Height:	52 in	(1320 mm)
Width:	11.4 in	(290 mm)
Depth:	11.4 in	(290 mm)
Weight including brackets:	26.7 lbs	(12 Kg)
Rated wind velocity:	113 mph	(180 Km/h)
Wind Area (CxA/Front):	3.9 sq.ft	(0.36 sq.m)
Lateral thrust at rated wind		
Worst case:	570 N	

Materials:

Radiating elements:	Aluminum
Element housing:	Grey PVC
Back-plate:	Aluminum
Mounting hardware	
clamps:	Hot dip galvanized steel
bolts:	Stainless steel

*Manufactured by: **Allgon System AB***

DECIBEL®
Base Station Antennas

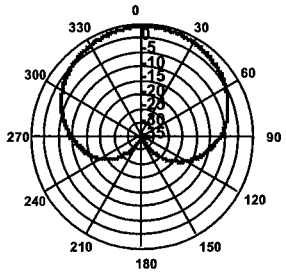
950F85T2E-M

16.9 dBi, Directed Dipole Antenna
1850-1990 MHz

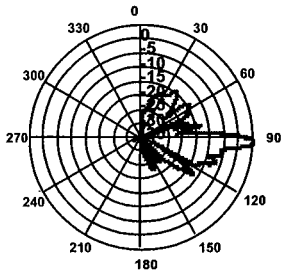
1850-1990 MHz

dB Director®

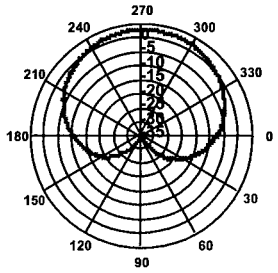
- Exceptional azimuth roll-off reducing soft hand-offs and improving capacity
- Excellent upper side lobe suppression
- Deep null filling below the horizon assures improved signal intensity
- Low profile appearance and low wind loading profile for easier zoning approvals



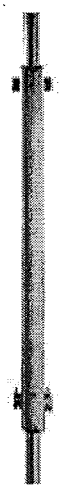
Azimuth 1920 MHz (Tilt=2)



Vertical 1920 MHz (Tilt=2)



Horizontal 1920 MHz (Tilt=2)



ELECTRICAL		MECHANICAL	
Frequency (MHz):	1850-1990	**Weight:**	11.5 lbs (5.2 kg)
Polarization:	Vertical	**Dimensions (LxWxD):**	60 X 3.5 X 7 in (1524 X 89 X 178 mm)
Gain (dBd/dBi):	14.8/16.9	**Max. Wind Area:**	2.9 ft² (0.27 m²)
Azimuth BW:	85°	**Max. Wind Load (@ 100mph):**	116 lbf (516 N)
Elevation BW:	6.5°	**Max. Wind Speed:**	125 mph (201 km/h)
Beam Tilt:	2°	**Radiator Material:**	Low Loss Circuit Board
USLS* (dB):	>16	**Reflector Material:**	Passivated Aluminum
Null Fill* (dB):	12	**Radome Material:**	ABS, UV Resistant
Front-to-Back Ratio* (dB):	40	**Mounting Hardware Material:**	Galvanized Steel
VSWR:	<1.33:1	**Connector Type:**	7-16 DIN - Female (Bottom)
IM Suppression - Two 20 Watt Carriers:	-150 dBc	**Color:**	Light Gray
Impedance:	50 Ohms	**Standard Mounting Hardware:**	DB390 Pipe Mount Kit, included
Max Input Power:	250 Watts	**Downtilt Mounting Hardware:**	DB5098, optional
Lightning Protection:	DC Ground	**Opt. Mounting Hardware:**	DB5094-AZ Azimuth Wall Mount
Opt Electrical Tilt:	0°,4°,6°		

Andrew Corporation
8635 Stemmons Freeway
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Fax: 1.800.229.4706
www.andrew.com

dbtech@andrew.com

Date: 1/23/2004
* - Indicates Typical Values

General Power Density

Site Name: Durham
Tower Height: 98 FT

Operator	Operating Frequency	Number of Trans.	ERP Per Trans.	Total ERP	Distance to Target	Calculated Power Density	Maximum Permissable Exposure*	Fraction of MPE
	(MHz)		(watts)	(watts)	(feet)	(mW/cm^2)	(mW/cm^2)	(%)
Verizon	880	9	200	1800	98	0.0674	0.586	11.50%
Verizon	1900	3	200	600	98	0.0225	1	2.25%
Total Percentage of Maximum Permissible Exposure								**13.75%**

*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^2 = milliwatts per square centimeter
ERP = Effective Radiated Power

March 14, 2005

John Murphy
Crown Castle International
500 West Cummings Park, Suite 3400
Woburn, MA 01801
(781) 729-4406

Vertical Structures, Inc.
309 Spangler Drive, Suite E
Richmond, KY 40475
(859) 624-8360
ncoomes@verticalstructures.com

Subject: Structural Analysis Report

Carrier Designation	**Verizon Change-Out** **Carrier Site Number: HRT106** **Carrier Site Name: Durham**
Crown Castle Designation	**Crown Castle BU Number: 806364** **Crown Castle Site Name: HRT 106(B)** **Crown Castle JDE Job Number: 59128**
Engineering Firm Designation	**Vertical Structures Project Number: 2005-004-026**
Site Data	**101 R Old Blue Hill Road, Durham, CT, Middlesex County** **Latitude 41°-27'-33.67", Longitude -72°-39'-45.83"** **100' Valmont Monopole Tower**

Dear Mr. Murphy,

Vertical Structures is pleased to submit this structural analysis report to determine the structural integrity of the aforementioned tower. This analysis has been performed in accordance with the Crown Castle Structural 'Statement of Work' and the terms of Crown Castle Purchase Order Number 177139. The purpose of the analysis is to determine the suitability of the tower upon replacing three (3) existing Swedcom ALP 9212-N panel antennas with six (6) proposed Decibel DB950F85T2E-M panel antennas at 98' for Verizon Wireless when combined with the existing and reserved equipment on the structure. This analysis has been performed in accordance with the TIA/EIA-222-F standard and local code requirements based upon a wind speed condition of 85 MPH.

Based on our analysis we have determined the tower superstructure and foundation are sufficient for the proposed loading.

Vertical Structures appreciates the opportunity of providing our continuing professional services to you and Crown Castle International. If you have any questions or need further assistance on this or any other projects please give us a call.

Respectfully submitted,

Nathan Coomes
Project Engineer

January 26, 2005

Lincoln Erhard
Crown Castle International
500 West Cummings Park, Suite 3400
Woburn, MA 01801
(781) 729-4406

Vertical Structures, Inc.
309 Spangler Drive, Suite E
Richmond, KY 40475
(859) 624-8360
ncoomes@verticalstructures.com

Subject: **Structural Analysis Report**

Carrier Designation	**Verizon Change-Out** **Carrier Site Number: HRT106** **Carrier Site Name: Durham**
Crown Castle Designation	**Crown Castle BU Number: 806364** **Crown Castle Site Name: HRT 106(B)** **Crown Castle JDE Job Number: 59128**
Engineering Firm Designation	**Vertical Structures Project Number: 2005-004-015**
Site Data	**101 R Old Blue Hill Road, Durham, CT, Middlesex County** **Latitude 41°-27'-33.67", Longitude -72°-39'-45.83"** **120' Valmont Monopole Tower**

Dear Mr. Erhard,

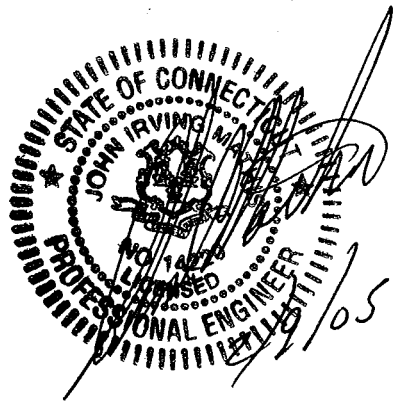
Vertical Structures is pleased to submit this structural analysis report to determine the structural integrity of the aforementioned tower. This analysis has been performed in accordance with the Crown Castle Structural 'Statement of Work' and the terms of Crown Castle Purchase Order Number 173408. The purpose of the analysis is to determine the suitability of the tower upon replacing the existing platform at 98' with a proposed low profile platform as well as replacing three (3) existing Swedcom ALP 9212-N panel antennas with six (6) proposed Decibel DB950F85T2E-M panel antennas at 98' for Verizon Wireless when combined with the existing and reserved equipment on the structure. This analysis has been performed in accordance with the TIA/EIA-222-F standard and local code requirements based upon a wind speed condition of 85 MPH.

Based on our analysis we have determined the tower superstructure and foundation are sufficient for the proposed loading.

Vertical Structures appreciates the opportunity of providing our continuing professional services to you and Crown Castle International. If you have any questions or need further assistance on this or any other projects please give us a call.

Respectfully submitted,

Nathan Coomes
Project Engineer



DECIBEL PRODUCTS
An Allen Telecom Company

844H90EXYBAM

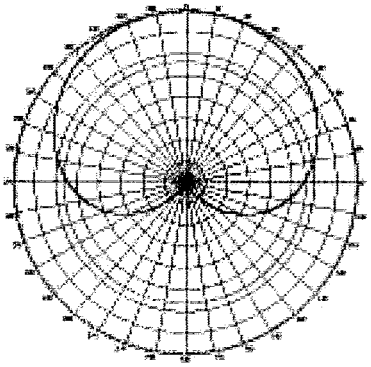
12 dBd
Log Periodic Antenna

824-896 MHz

dB Director®

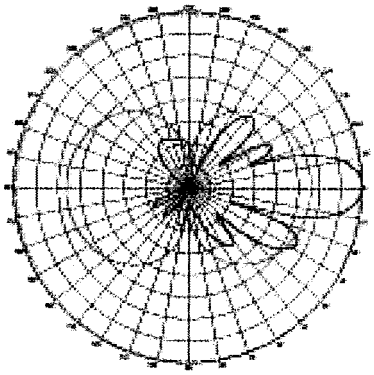
90°

- **Superior Azimuth pattern roll off, reducing sector to sector interference, improving call capacity.**
- **Extremely rugged, reliable design yet lightweight with low wind load.**

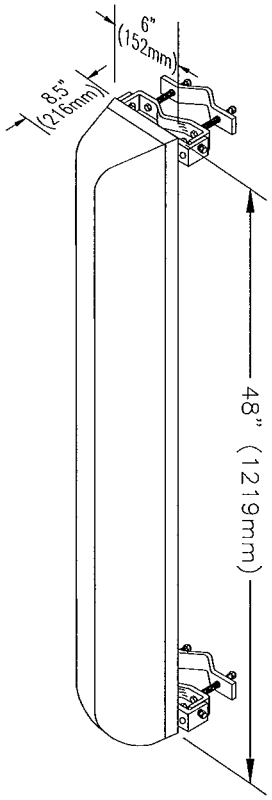


Azimuth (Horizontal)

Elevation (Vertical)



Scale: 10° radials, 5 dB per division



Electrical

Frequency:	824-896 MHz
Polarization:	Vertical
Gain:	12 dBd (14.1 dBi)
Azimuth BW:	90°
Elevation BW:	15.5°
USLS:	> 18 dB
Front-to-Back Ratio:	40 dB
VSWR:	1.22:1
PIM:	-150 dBc (2 tone, 20 watt)
Impedance:	50 Ohms
Max. Input Power:	500 Watts
Lightning Protection:	All metal parts are grounded

Mechanical

Weight:	10 lbs (4.5 kg)
Dimensions:	48" x 6" x 8.5" (1219 x 152 x 216 mm)
Max. Wind Area:	2.8 ft² (0.26 m²)
Max. Wind Load:	80 lbf (356N) 35.9 kp (at 100 mph)
Max. Wind Speed:	125 mph (201 km/h)
Radiators:	Brass
Reflector:	Pass. Aluminum
Radome:	ABS, UV Resistant
Mounting Hardware:	Galvanized Steel
Connector:	7/16 DIN (Back)
Color:	Gray

Mounting Options

Standard:	DB380 pipe mount kit included.
Downtilt:	DB5083 downtilt brackets, optional.

8635 Stemmons Freeway • Dallas, Texas U.S.A. 75247-3701
Dallas/Ft.Worth Area Tel: 214.631.0310 • Fax: 214.631.4706
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099089-052 05/02-B

ISO9001 Compliant

DECIBEL
Base Station Antennas

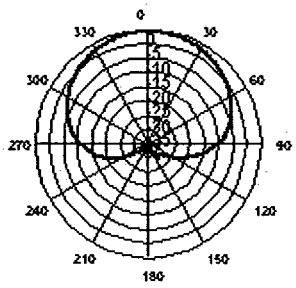
948F85T2E-M

16.1 dBi, Directed Dipole Antenna
1850-1990 MHz

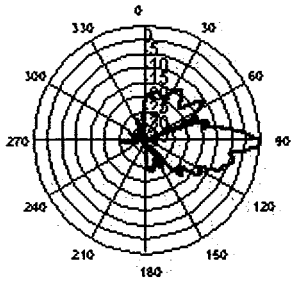
1850-1990 MHz
MaxFill™
dB Director®

- Exceptional azimuth roll-off reducing soft hand-offs and improving capacity
- Excellent upper side lobe suppression
- Deep null filling below the horizon assures improved signal intensity
- Low profile appearance and low wind loading profile for easier zoning approvals

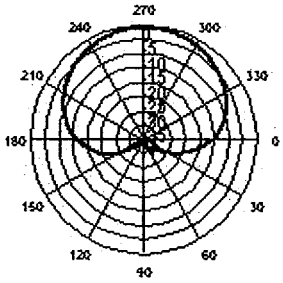
85°



Azimuth 1850 MHz (Tilt=2)



Vertical 1850 MHz (Tilt=2)



Horizontal 1850 MHz (Tilt=2)

ELECTRICAL		MECHANICAL	
Frequency (MHz):	1850-1990	**Weight:**	8.5 lbs (3.9 kg)
Polarization:	Vertical	**Dimensions (LxWxD):**	48 X 3.5 X 7 in (1219 X 89 X 178 mm)
Gain (dBd/dBi):	14/16.1	**Max. Wind Area:**	1.18 ft² (0.11 m²)
Azimuth BW:	85°	**Max. Wind Load (@ 100mph):**	65 lbf (289 N)
Elevation BW:	8°	**Max. Wind Speed:**	125 mph (201 km/h)
Beam Tilt:	2°	**Radiator Material:**	Low Loss Circuit Board
USLS* (dB):	>18	**Reflector Material:**	Aluminum
Null Fill* (dB):	15	**Radome Material:**	ABS, UV Resistant
Front-to-Back Ratio* (dB):	40	**Mounting Hardware Material:**	Galvanized Steel
VSWR:	<1.33:1	**Connector Type:**	7-16 DIN - Female (Bottom)
IM Suppression - Two 20 Watt Carriers:	-150 dBc	**Color:**	Light Gray
Impedance:	50 Ohms	**Standard Mounting Hardware:**	DB390 Pipe Mount Kit, included
Max Input Power:	250 Watts	**Downtilt Mounting Hardware:**	DB5098, optional
Lightning Protection:	DC Ground	**Opt. Mounting Hardware:**	DB5094-AZ Azimuth Wall Mount
Opt Electrical Tilt:	0°,4°,6°		

Andrew Corporation
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Tel: 214.631.0310

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Fax: 1.800.229.4706
www.andrew.com

dbtech@andrew.com

Date: 4/29/2004
* - Indicates Typical Values

General Power Density

Site Name: Madison, CT
Tower Height: 170 FT

Operator	Operating Frequency	Number of Trans.	ERP Per Trans.	Total ERP	Distance to Target	Calculated Power Density	Maximum Permissable Exposure*	Fraction of MPE
	(MHz)		(watts)	(watts)	(feet)	(mW/cm^2)	(mW/cm^2)	(%)
Verizon	880	9	200	1800	170	0.0224	0.586	3.82%
Verizon	1900	3	200	600	170	0.0075	1	0.75%
Total Percentage of Maximum Permissible Exposure								**4.57%**

*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

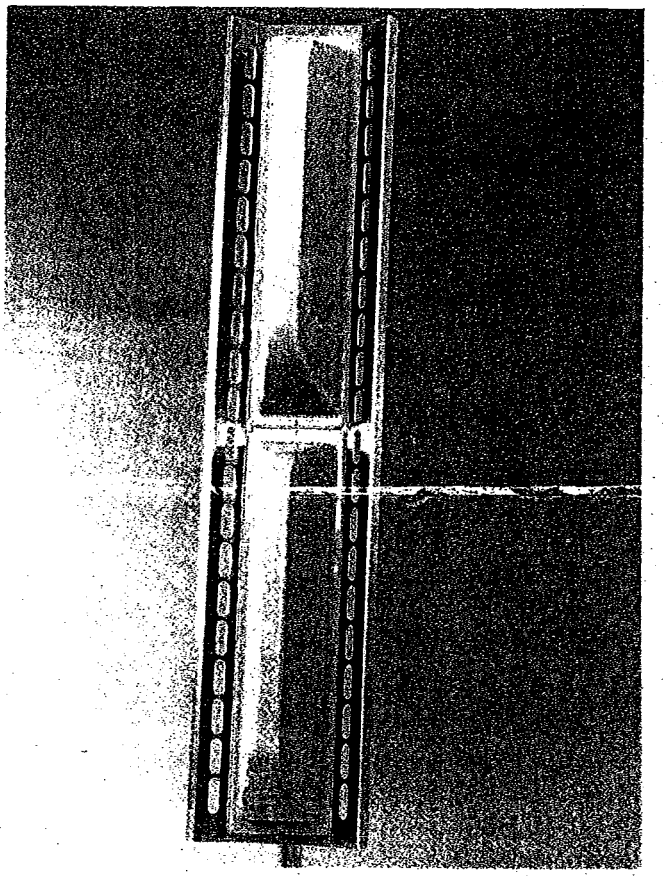
MHz = Megahertz
mW/cm^2 = milliwatts per square centimeter
ERP = Effective Radiated Power

Swedcom Corporation

ALP 9212-N

Log-Periodic Reflector Antenna

92 Degrees 12 dBd



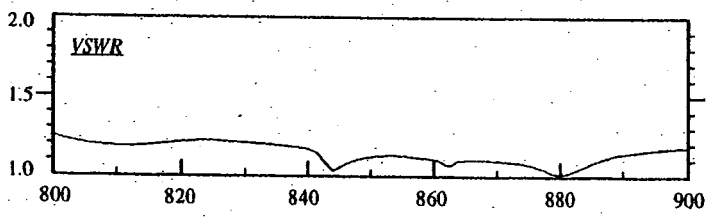
Features:

- ❑ **Broadbanded. (800-900 MHz)**
- ❑ **Low backlobe radiation. Front-to-back ratio better than 28 dB**
- ❑ **Low Intermodulation Products.**
- ❑ **Low Wind-load.**
- ❑ **Low weight.**
- ❑ **Small size.**
- ❑ **Rugged design.**

Please see the following pages including radiation patterns/tables for *ALP 9212-N.*

Electrical Specifications:

Frequency range:	806-896 MHz
Impedance:	50 ohm
Connector:	N-female or 7/8" EIA
VSWR:	Typ. 1.3:1 max 1.5:1
Polarization:	Vertical
Gain:	12 dBd
Front to back ratio:	>28 dB
Side-lobe supression:	>18 dB
Intermodulation: (2x25W):	IM3 >146 dB
	IM5 >153 dB
	IM7 & IM9 >163 dB
Power Rating:	500 W
H-Plane: -3 dB	95 °
E-Plane: -3 dB	15 °
Lightning Protection:	DC Grounded



Mechanical Specifications:

Overall Height:	52 in	(1320 mm)
Width:	11.4 in	(290 mm)
Depth:	11.4 in	(290 mm)
Weight including brackets:	26.7 lbs	(12 Kg)
Rated wind velocity:	113 mph	(180 Km/h)
Wind Area (CxA/Front):	3.9 sq.ft	(0.36 sq.m)
Lateral thrust at rated wind		
Worst case:	570 N	

Materials:

Radiating elements:	Aluminum
Element housing:	Grey PVC
Back-plate:	Aluminum
Mounting hardware	
clamps:	Hot dip galvanized steel
bolts:	Stainless steel

*Manufactured by: **Allgon System AB***

DECIBEL
Base Station Antennas

948F85T2E-M

16.1 dBi, Directed Dipole Antenna
1850-1990 MHz

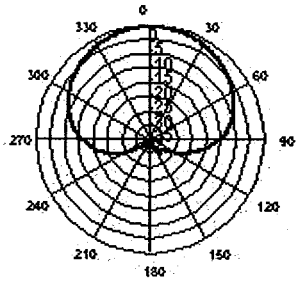
1850-1990 MHz

MaxFill™

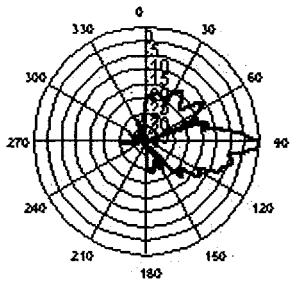
dB Director®

- Exceptional azimuth roll-off reducing soft hand-offs and improving capacity
- Excellent upper side lobe suppression
- Deep null filling below the horizon assures improved signal intensity
- Low profile appearance and low wind loading profile for easier zoning approvals

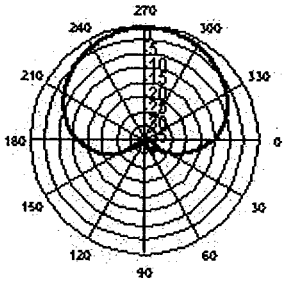
85°



Azimuth 1850 MHz (Tilt=2)



Vertical 1850 MHz (Tilt=2)



Horizontal 1850 MHz (Tilt=2)

ELECTRICAL	
Frequency (MHz):	1850-1990
Polarization:	Vertical
Gain (dBd/dBi):	14/16.1
Azimuth BW:	85°
Elevation BW:	8°
Beam Tilt:	2°
USLS* (dB):	>18
Null Fill* (dB):	15
Front-to-Back Ratio* (dB):	40
VSWR:	<1.33:1
IM Suppression - Two 20 Watt Carriers:	-150 dBc
Impedance:	50 Ohms
Max Input Power:	250 Watts
Lightning Protection:	DC Ground
Opt Electrical Tilt:	0°,4°,6°

MECHANICAL	
Weight:	8.5 lbs (3.9 kg)
Dimensions (LxWxD):	48 X 3.5 X 7 in (1219 X 89 X 178 mm)
Max. Wind Area:	1.18 ft² (0.11 m²)
Max. Wind Load (@ 100mph):	65 lbf (289 N)
Max. Wind Speed:	125 mph (201 km/h)
Radiator Material:	Low Loss Circuit Board
Reflector Material:	Aluminum
Radome Material:	ABS, UV Resistant
Mounting Hardware Material:	Galvanized Steel
Connector Type:	7-16 DIN - Female (Bottom)
Color:	Light Gray
Standard Mounting Hardware:	DB390 Pipe Mount Kit, included
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dbtech@andrew.com

Date: 4/29/2004
* - Indicates Typical Values

General Power Density

Site Name: Middletown, CT
Tower Height: 179 FT

Operator	Operating Frequency	Number of Trans.	ERP Per Trans.	Total ERP	Distance to Target	Calculated Power Density	Maximum Permissable Exposure*	Fraction of MPE
	(MHz)		(watts)	(watts)	(feet)	(mW/cm^2)	(mW/cm^2)	(%)
Verizon	880	9	200	1800	179	0.0202	0.586	3.45%
Verizon	1900	3	200	600	179	0.0067	1	0.67%
Total Percentage of Maximum Permissible Exposure								**4.12%**

*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^2 = milliwatts per square centimeter
ERP = Effective Radiated Power