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

Internet: ct.gov/csc

Daniel F. Caruso
Chairman

July 19, 2010

John-Markus Pinard
Real Estate Consultant
New Cingular Wireless PCS, LLC
500 Enterprise Drive
Rocky Hill, CT 06067-3900

RE: **EM-CING-011-100628** – New Cingular Wireless PCS, LLC notice of intent to modify an existing telecommunications facility located at 12 Burr Road, Bloomfield, Connecticut.

Dear Mr. Levine:

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.

The proposed modifications are to be implemented as specified here and in your notice dated June 25, 2010, 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. 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. 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,

S. Derek Phelps
Executive Director

SDP/CDM/laf

c: The Honorable Sydney Schulman, Mayor, Town of Bloomfield
Louie Chapman, Jr., Town Manager, Town of Bloomfield
Thomas B. Hooper, Director of Planning, Town of Bloomfield
SBA Towers II

STATE OF CONNECTICUT

CONNECTICUT SITING COUNCIL

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

E-Mail: siting.council@ct.gov

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Daniel F. Caruso
Chairman

June 28, 2010

The Honorable Sydney Schulman
Mayor
Town of Bloomfield
Town Hall
800 Bloomfield Avenue
P. O. Box 337
Bloomfield, CT 06002-0337

011 100622

RE: **EM-CING-062-100622** – New Cingular Wireless PCS, LLC notice of intent to modify an existing telecommunications facility located at 12 Burr Road, Bloomfield, Connecticut.

Dear Mayor Schulman:

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.

If you have any questions or comments regarding this proposal, please call me or inform the Council by July 12, 2010.

Thank you for your cooperation and consideration.

Very truly yours,

S. Derek Phelps
Executive Director

SDP/laf

Enclosure: Notice of Intent

c: Louie Chapman, Jr., Town Manager, Town of Bloomfield
Thomas B. Hooper, Director of Planning, Town of Bloomfield

ORIGINAL

EM-CING-011-100628

New Cingular Wireless PCS, LLC
960 Turnpike Street, Suite 28
Canton, MA 02021
Phone: (508)667-0363
Fax: (617) 249-0819

John-Markus Pinard
Real Estate Consultant

June 25, 2010

RECEIVED
JUN 28 2010
CONNECTICUT
SITING COUNCIL

Honorable Daniel F. Caruso, Chairman,
and Members of the Connecticut Siting Council
Connecticut Siting Council
10 Franklin Square
New Britain, Connecticut 06051

Re: Notice of Exempt Modification – Existing SBA Towers II, LLC Tower Facility at 12 Burr Road, Bloomfield

Dear Chairman Caruso and Members of the Council:

New Cingular Wireless PCS, LLC ("AT&T") intends to install telecommunications antennas and associated equipment at an existing multicarrier telecommunications tower at 12 Burr Road, Bloomfield, CT. AT&T operates under licenses issued by the Federal Communications Commission ("FCC") to provide cellular and PCS mobile telephone service in Hartford County, which includes the area to be served by AT&T's proposed installation.

Please accept this letter as notification to the Council, pursuant to R.C.S.A. Section 16-50j-73, of construction which 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 is being sent to the Mayor of Bloomfield.

Existing Facility

The Bloomfield facility is located on Burr Road on the north side of CT Route 185. Site coordinates (NAD83) are N41° 49' 4.29" and W72° 45' 52.24".

The facility is owned by SBA Towers II, LLC.

The existing facility was originally approved in Siting Council Docket 379.

The existing facility consists of a 130-foot self-supporting monopole tower within a 50 ft x 90 ft compound surrounded by a chain link fence. SBA Towers II, LLC currently operates wireless communications equipment at the facility.

Proposed Modifications

As shown on the attached drawings and as further described below, AT&T proposes to install up to twelve (12) Powerwave 7750-panel antennas, or their functional equivalents, at a centerline height of 107' feet above ground level. AT&T also proposes to place a 12' x 20' prefabricated concrete equipment shelter and an emergency electric power diesel generator at the base of the tower within the existing compound. There will be no extension to the existing compound or the height of the existing tower as a result of this application.

Attached to this Notice are the following: a location map, site plans, a tower profile drawing, electric generator specifications, and a structural analysis report demonstrating that the tower is structurally capable of supporting the proposed AT&T telecommunications equipment at the proposed height of 107 feet above ground level.

Statutory Considerations

The changes to the Bloomfield tower 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 or altered. 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) because they will not result in any substantial adverse environmental effect.

1. The height of the overall structure will be unaffected.

2. The proposed changes will not affect the property boundaries. All new construction will take place inside the existing fenced compound.

3. The proposed additions will not increase the noise level at the existing facility by six decibels or more.

4. Operation of AT&T's antennas will not increase the total radio frequency electromagnetic radiation power density, measured at the tower base, to or above the standard adopted by the State of Connecticut and the FCC. The before and after "worst-case" exposure calculations in accordance with FCC OET Bulletin No. 65 (1997) for a point of interest at the base of the tower in relation to the operation of the proposed antenna array are as follows:

Company	Centerline Height (feet)	Frequency (MHz)	Number of Channels	Power Per Channel (Watts)	Power Density† (mW/cm^2)	Standard Limits (mW/cm^2)	Percent of Limit
T-Mobile *	127	1945	8	158	0.0282	1.0000	2.82
Verizon Cellular *	117	1970	3	526.32	0.0415	1.0000	4.15
Verizon PCS *	117	869	9	425.77	0.1007	0.5793	17.37
Verizon 700 MHz *	117	746	1	867.46	0.0228	0.4973	4.58
AT&T GSM	107	880	3	296	0.0279	0.5867	4.75
AT&T GSM	107	1960	1	427	0.0134	1.0000	1.34
AT&T UMTS	107	880	1	500	0.0157	0.5867	2.68
AT&T UMTS	107	1960	1	500	0.0157	1.0000	1.57
Clearwire *	97	2496	2	153	0.0117	1.0000	1.17
Clearwire *	97	11 GHz	1	211	0.0081	1.0000	0.81
TOTAL							**35.02%**

* Power density parameters from Council records.

† Please note that the standard power density equation provided by the Council in its memo of January 22, 2001 incorporates a ground reflection factor of 2.56 (i.e., the square of 1.6) as described in FCC OET Bulletin No. 65.

As the table demonstrates, the cumulative "worst-case" power density would be 35.02 % of the ANSI/IEEE standard, as calculated for mixed frequency sites. Therefore, total power density levels resulting from AT&T's use of the tower facility would be within applicable standards.

For the foregoing reasons, New Cingular Wireless PCS, LLC respectfully submits that proposed changes at the Bloomfield facility constitute an exempt modification under R.C.S.A. Section 16-50j-72(b)(2).

Please feel free to call me with any questions concerning this notice. The filing fee for the application is attached in the amount of $625. Thank you for your consideration in this matter.

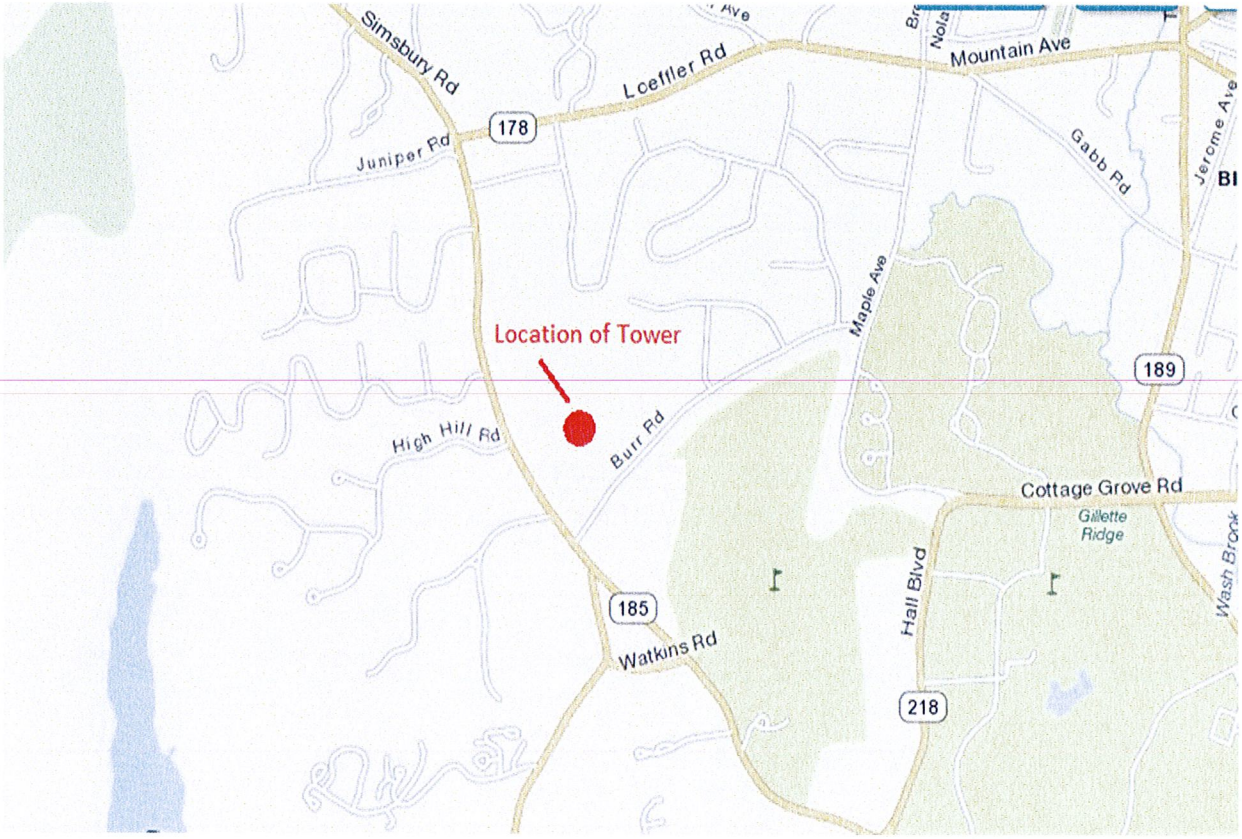
Respectfully yours,

John-Markus Pinard
Real Estate Consultant

Enclosures

cc: Honorable Sydney T. Schulman, Mayor, Town of Bloomfield
Michele G. Briggs, Manager of Real Estate
Christopher B. Fisher, Esq.

Bloomfield - Burr Road



FDH ENGINEERING

FDH Engineering, Inc., 2730 Rowland Rd. Raleigh, NC 27615, Ph. 919.755.1012, Fax 919.755.1031

Structural Analysis for SBA Network Services, Inc.

130 ft Monopole (Extendable to 140 ft)

Site Name: Bloomfield 4
Site ID: CT13548-S

FDH Project Number 10-031164E S1

Prepared By:

Jeremy D. Piner, PE
Senior Project Engineer

Reviewed By:

Christopher M. Murphy, PE
Vice President
CT PE License No. 25842

FDH Engineering, Inc.
2730 Rowland Rd.
Raleigh, NC 27615
(919) 755-1012
info@fdh-inc.com

March 22, 2010

Prepared pursuant to ANSI/TIA-222-G Structural Standard for Antenna Supporting Structures and Antennas

TABLE OF CONTENTS

EXECUTIVE SUMMARY

At the request of SBA Network Services, Inc., FDH Engineering, Inc. performed a structural analysis of the monopole located in Bloomfield, CT to determine whether the tower is structurally adequate to support both the existing and proposed loads, pursuant to the *Structural Standard for Antenna Supporting Structures and Antennas, ANSI/TIA-222-G.* Information pertaining to the existing/proposed antenna loading, current tower geometry, and member sizes was obtained from ROHN Products LLC (File No. 0606820) original design drawings dated February 4, 2010 and SBA Network Services, Inc.

The *basic design wind speed* per *ANSI/TIA-222-G* standards is 105 mph without ice and 50 mph with 1" radial ice. Ice is considered to increase in thickness with height. Furthermore, the tower was analyzed as a Class II structure in Exposure Category C.

Conclusions

With the current and proposed antennas from AT&T at 107 ft., the tower meets the requirements of the *ANSI/TIA-222-G* standards provided the **Recommendations** below are satisfied. Furthermore, provided the foundation is constructed to support the original design reactions (see ROHN Dwg No.: 606820-01-F2), the foundation should have the necessary capacity to support the existing and proposed loading. For a more detailed description of the analysis of the tower, see the **Results** section of this report.

Our structural analysis has been performed assuming all information provided to FDH Engineering, Inc. is accurate (i.e. the steel data, tower layout, existing antenna loading, and proposed antenna loading) and that the tower will be properly erected and maintained per the original design drawings.

Recommendation

To ensure the requirements of the *ANSI/TIA-222-G* standards are met with the existing and proposed loading in place, we have the following recommendation:

1. All future & proposed coax should be installed inside the monopole's shaft.
2. The future & proposed TMAs should be installed directly behind panel antennas.

APPURTENANCE LISTING

The proposed and existing antennas with their corresponding cables/coax lines are shown in **Table 1**. *If the actual layout determined in the field deviates from this layout, FDH Engineering, Inc. should be contacted to perform a revised analysis.*

Table 1 – Appurtenance Loading

Existing Loading:

Antenna No.	Antenna Elevation (ft)	Description	Coax and Lines [1]	Carrier	Mount Elevation (ft)	Mount Type
1-12	137	(12) Decibel DB848H90E-XY (12) TMAs	(18) 1-5/8"	*Future*	137	(1) 12' Low Profile Platform w/ Rails
13-21	127	(9) RFS APXV18-209014-C (6) TMAs	(18) 1-5/8"	T-Mobile	127	(1) 12' Low Profile Platform w/ Rails
12-36	117	(6) Antel LPA-80063/6CF (6) Antel LPA-185063/12CF (3) Antel BXA-70063/6CF	(18) 1-5/8"	Verizon	117	(1) 12' Low Profile Platform w/ Rails
37-41	97	(3) Argus LLPX310R (1) Andrew VHLP2-11 (1) Andrew VHLP2.5-11 (3) BTS 26"x14"x9"	(1) 5/16 (2) 1/2" (3) 5/8" (3) 1/4"	Clearwire	97	(3) Standoff w/Pipe Mount
42	87	(1) 6' Dish w/ Radome	(1) 1-5/8"	*Future*	87	Direct

1 All coax is to be installed inside the pole's shaft, unless noted otherwise.

Proposed Loading:

Antenna No.	Antenna Elevation (ft)	Description	Coax and Lines	Carrier	Mount Elevation (ft)	Mount Type
1-12	107	(12) Powerwave 7750.00 (12) Powerwave TT08-19DB111-001 TMAs (12) Powerwave 7020.00 RETs (1) GPS	(12) 1-5/8" (1) 1/2"	AT&T	107	(1) 12' Low Profile Platform w/ Rails

RESULTS

Based on information obtained from the original design drawings, the yield strength of steel for individual members was as follows:

Table 2 - Material Strength

Member Type	Yield Strength
Tower Shaft Sections	65 ksi
Flange Plate	50 ksi
Flange Bolts	92 ksi
Base Plate	50 ksi
Anchor Bolts	105 ksi

Table 3 displays the summary of the ratio (as a percentage) of actual force in the member to their allowable capacities. Values greater than 100% indicate locations where the maximum force in the member exceeds its allowable capacity. **Table 4** displays the maximum foundation reactions.

If the assumptions outlined in this report differ from actual field conditions, FDH Engineering, Inc. should be contacted to perform a revised analysis. Furthermore, as no information pertaining to the allowable twist and sway requirements for the existing or proposed appurtenances was provided, deflection and rotation were not taken into consideration when performing this analysis.

See the **Appendix** for detailed modeling information.

Table 3 – Summary of Working Percentage of Structural Components

Section No.	Elevation ft	Component Type	Size	% Capacity	Pass Fail
L1	140 - 130	Pole	TP20.6x18x0.1875	13.1	Pass
	130	Flange Bolts	(8) 1" Ø w/ BC = 24.125"	20.9	Pass
	130	Flange Plate	27" Ø PL x 1.5" thk.	6.7	Pass
L2	130 - 86.25	Pole	TP31.99x20.6x0.25	69.8	Pass
L3	86.25 - 42.4167	Pole	TP53x30.4052x0.375	47.4	Pass
L4	42.4167 - 0	Pole	TP53x49.6218x0.375	79.0	Pass
		Anchor Bolts	(24) 1.5" Ø w/ BC = 58.125"	89.5	Pass
		Base Plate	62" Ø PL x 2.0" thk.	64.3	Pass

Table 4 – Maximum Base Reactions

Base Reactions	Current Analysis *(ANSI/TIA-222-G)*	Original Design *(TIA/EIA-222-F)*
Axial	49 k	51 k
Shear	35 k*	27 k
Moment	3,525 k-ft*	2,826 k-ft

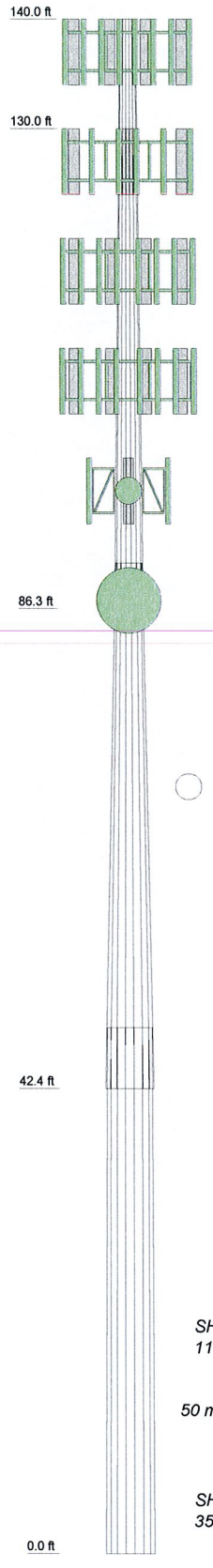
*Current analysis reactions are within an allowable factor of 1.35, per *ANSI/TIA-222-G*, when the original design reactions are based on an allowable stress design.

GENERAL COMMENTS

This engineering analysis is based upon the theoretical capacity of the structure. It is not a condition assessment of the tower and its foundation. It is the responsibility of SBA Network Services, Inc. to verify that the tower modeled and analyzed is the correct structure (with accurate antenna loading information) modeled. If there are substantial modifications to be made or the assumptions made in this analysis are not accurate, FDH Engineering, Inc. should be notified immediately to perform a revised analysis.

LIMITATIONS

All opinions and conclusions are considered accurate to a reasonable degree of engineering certainty based upon the evidence available at the time of this report. All opinions and conclusions are subject to revision based upon receipt of new or additional/updated information. All services are provided exercising a level of care and diligence equivalent to the standard and care of our profession. No other warranty or guarantee, expressed or implied, is offered. Our services are confidential in nature and we will not release this report to any other party without the client's consent. The use of this engineering work is limited to the express purpose for which it was commissioned and it may not be reused, copied, or distributed for any other purpose without the written consent of FDH Engineering, Inc.



Section	Length (ft)	Number of Sides	Thickness (in)	Socket Length (ft)	Top Dia (in)	Bot Dia (in)	Grade	Weight (K)
1	10.00	18	0.1875		18.0000	20.6000		0.4
2	43.75	18	0.2500	4.17	20.6000	31.9900		3.1
3	48.00	18	0.3750	5.58	30.4052	53.0000	A572-65	8.0
4	48.00	18	0.3750		49.6218	53.0000		9.9
								21.4

ALL REACTIONS ARE FACTORED

AXIAL 95 K

SHEAR 11 K — *MOMENT 1197 kip-ft*

TORQUE 0 kip-ft

50 mph WIND - 1.0000 in ICE

AXIAL 49 K

SHEAR 35 K — *MOMENT 3525 kip-ft*

TORQUE 0 kip-ft

REACTIONS - 95 mph WIND

DESIGNED APPURTENANCE LOADING

TYPE	ELEVATION	TYPE	ELEVATION
(4) DB848H90E-XY w/Mount Pipe (Future)	137	(2) LPA-185063/12CF w/Mount Pipe (Verizon)	117
(4) DB848H90E-XY w/Mount Pipe (Future)	137	(2) LPA-185063/12CF w/Mount Pipe (Verizon)	117
(4) DB848H90E-XY w/Mount Pipe (Future)	137	(2) LPA-185063/12CF w/Mount Pipe (Verizon)	117
(4) TMA (Future)	137	BXA-70063/6CF w/Mount Pipe (Verizon)	117
(4) TMA (Future)	137		
(4) TMA (Future)	137	(4) Powerwave 7020.00 RET (ATT)	107
Platform Mount [LP 301-1] (Future)	137	(4) Powerwave 7020.00 RET (ATT)	107
(3) APXV18-209014-C w/Pipe Mount (T-Mobile)	127	(4) Powerwave 7020.00 RET (ATT)	107
		Platform Mount [LP 301-1] (ATT)	107
(3) APXV18-209014-C w/Pipe Mount (T-Mobile)	127	(4) 7750.00 w/Mount Pipe (ATT)	107
		(4) 7750.00 w/Mount Pipe (ATT)	107
(3) APXV18-209014-C w/Pipe Mount (T-Mobile)	127	(4) 7750.00 w/Mount Pipe (ATT)	107
		(4) TT08-19DB111-001 TMA (ATT)	107
(2) TMA (T-Mobile)	127	(4) TT08-19DB111-001 TMA (ATT)	107
(2) TMA (T-Mobile)	127	(4) TT08-19DB111-001 TMA (ATT)	107
(2) TMA (T-Mobile)	127	GPS (ATT)	107
Platform Mount [LP 301-1] (T-Mobile)	127	Side Mount Standoff (1) (Clearwire)	97
BXA-70063/6CF w/Mount Pipe (Verizon)	117	Side Mount Standoff (1) (Clearwire)	97
		LLPX310R w/Pipe Mount (Clearwire)	97
BXA-70063/6CF w/Mount Pipe (Verizon)	117	LLPX310R w/Pipe Mount (Clearwire)	97
		LLPX310R w/Pipe Mount (Clearwire)	97
Platform Mount [LP 301-1] (Verizon)	117	BTS 26"x14"x9" (Clearwire)	97
(2) LPA-80063/6CF w/Mount Pipe (Verizon)	117	BTS 26"x14"x9" (Clearwire)	97
		BTS 26"x14"x9" (Clearwire)	97
(2) LPA-80063/6CF w/Mount Pipe (Verizon)	117	Side Mount Standoff (1) (Clearwire)	97
		VHLP2-11 (Clearwire)	97
(2) LPA-80063/6CF w/Mount Pipe (Verizon)	117	VHLP2.5-11 (Clearwire)	97
		6' Dish w/Radome (Future)	87

MATERIAL STRENGTH

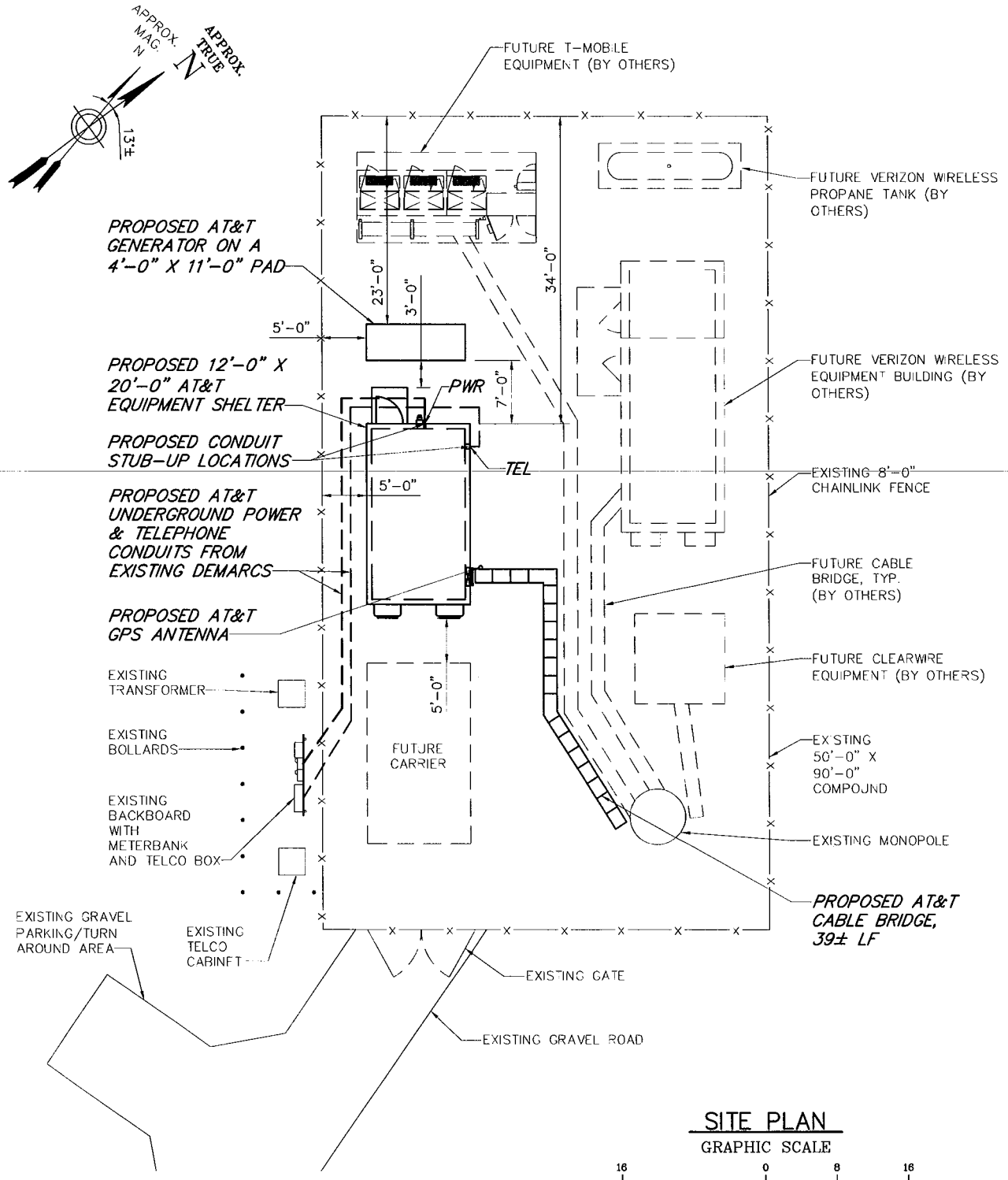
GRADE	Fy	Fu	GRADE	Fy	Fu
A572-65	65 ksi	80 ksi			

TOWER DESIGN NOTES

1. Tower is located in Hartford County, Connecticut.
2. Tower designed for Exposure C to the TIA-222-G Standard.
3. Tower designed for a 95 mph basic wind in accordance with the TIA-222-G Standard.
4. Tower is also designed for a 50 mph basic wind with 1.00 in ice. Ice is considered to increase in thickness with height.
5. Deflections are based upon a 60 mph wind.
6. Tower Structure Class II.
7. Topographic Category 1 with Crest Height of 0.00 ft
8. Vertical offsets have been utilized in this analysis to achieve accurate antenna centerline elevations.

FDH Engineering, Inc
2730 Rowland Road
Raleigh, North Carolina
Phone: (919) 755-1012
FAX: (919) 755-1031

Job: ***Bloomfield 4, CT S#CT13548-S***			
Project: ***10-03164E S1***			
Client: SBA	Drawn by: JDP		App'd:
Code: TIA-222-G	Date: 03/22/10		Scale: NTS
Path: W:\FDH-server\Projects\2010 Projects\3 - March\10-03164E\Bloomfield 4, CT\S1 - SA ATT\Analysis\Bloomfield 4, CT.en			Dwg No. E-1



SITE PLAN

GRAPHIC SCALE

16 0 8 16

IN FEET

NOTE:
PROPOSED CINGULAR WIRELESS INSTALLATION SHOWN IS ONLY APPROXIMATE. EXACT LOCATIONS AND DETAILS WILL BE DETERMINED BY FINAL ENGINEERING DESIGN.

CHA
2139 Silas Deane Highway, Suite 212 · Rocky Hill, CT 06067-2336
Main: (860) 257-4557 · www.chacompanies.com

at&t Your world. Delivered.
cingular WIRELESS
NEW CINGULAR WIRELESS PCS, LLC
500 ENTERPRISE DRIVE, ROCKY HILL, CT 06067

SR1049
BLOOMFIELD
12 BURR ROAD
BLOOMFIELD, CT 06002
HARTFORD COUNTY
CHA PROJ. NO. – 18301-1050

1 OF 2
REV 1
LE-1

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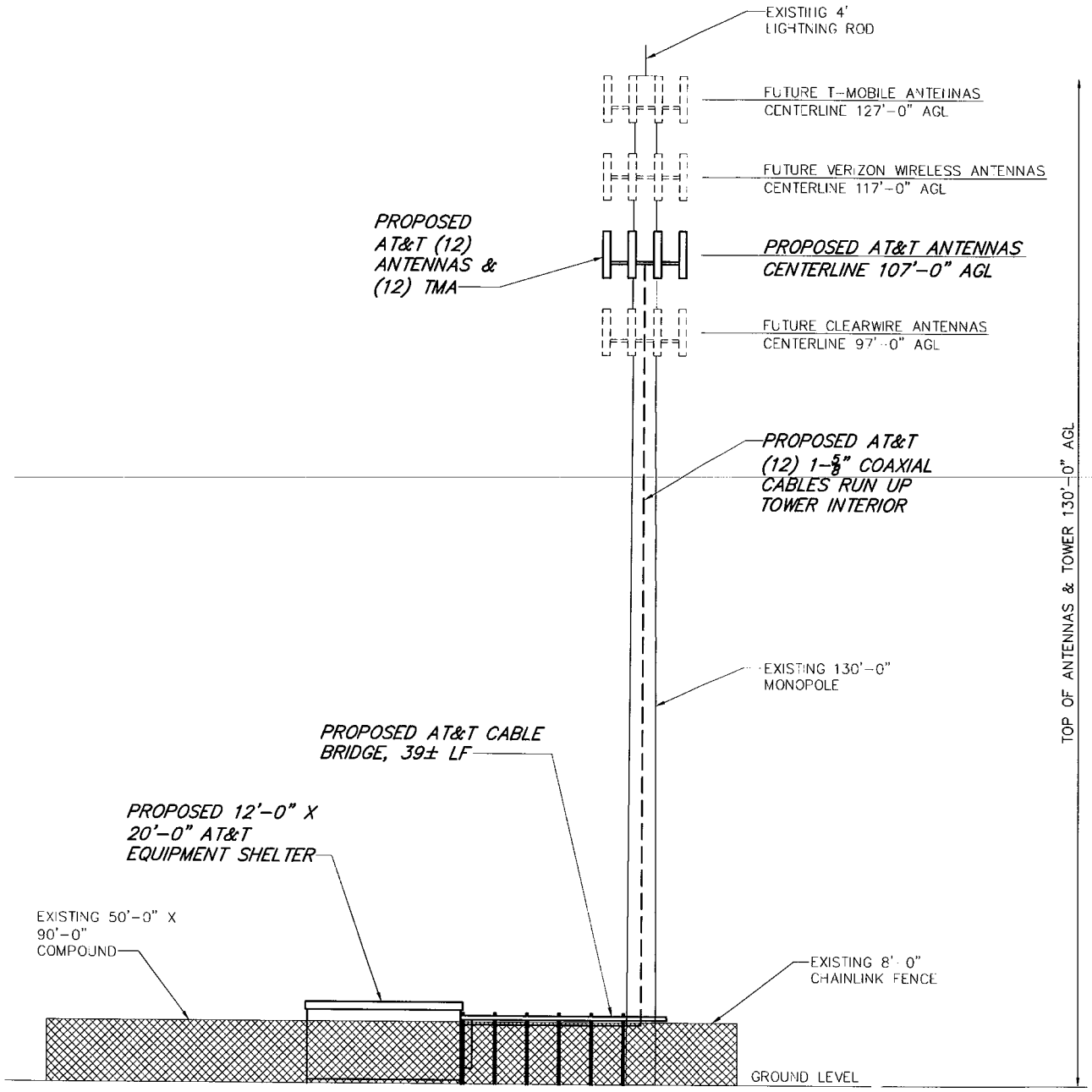

TOWER ELEVATION

NO SCALE

NOTE:
PROPOSED CINGULAR WIRELESS INSTALLATION SHOWN IS ONLY APPROXIMATE. EXACT LOCATIONS AND DETAILS WILL BE DETERMINED BY FINAL ENGINEERING DESIGN.

CHA
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NEW CINGULAR WIRELESS PCS, LLC
500 ENTERPRISE DRIVE, ROCKY HILL, CT 06067

SR1049
BLOOMFIELD
12 BURR ROAD
BLOOMFIELD, CT 06002
HARTFORD COUNTY
CHA PROJ. NO. – 18301-1050

2 OF 2

REV 1

LE-2

DATE: 3/19/2010 12:31 PM FILE: W:\SAC CINGULAR\1850\SITES\1050 BLOOMFIELD 1019\LE\BLOOMFIELD_LE.DWG

Dual Broadband Antenna

90° 1.4 m MET Antenna

806-960/1710-2170 MHz

Part Number: 7770.00 | Horizontal Beamwidth: 90° Gain: 13.5/16 dBi | Electrical Downtilt: Adjustable Connector Type: 7/16 female

The Powerwave dual band dual polarized broadband antenna has individual adjustable electrical downtilt per band (upgradeable to Remote Electrical Tilt (RET). Four connector ports allow separate tilts on each frequency band and ensure the use of diversity concepts. The phase shifter technology, based on a patented sliding dielectric, minimizes intermodulation distortion and maximizes efficiency. The slant +/- 45° dual polarization system provides the independent fading signals needed for achieving top-quality coverage via diversity concepts. The Powerwave Broadband antenna design is based on a patented stacked aperture-coupled patch technology, which provides high isolation performance and a wide VSWR bandwidth. The antennas have superior radiation patterns due to a unique reflector design which provides a very small variation of the –3dB horizontal beam width over the frequency band as well as a high front-to-back ratio.

Key Benefits

- Excellent broad- and multi-band capabilities
- Polarization purity makes good diversity gain
- Excellent pattern performance and high gain over frequency
- High passive intermodulation performance
- Light, slim and robust design

Preliminary

ANTENNA SYSTEMS

BASE STATION SYSTEMS

COVERAGE SYSTEMS

THE POWER IN WIRELESS®

Powerwave technologies

806-960/1710-2170 MHz

Dual Broadband Antenna

Electrical Specifications (Preliminary)

Frequency band (MHz)	806-960		1710-2170
Gain, ± 0.5dB (dBi)	13.5		16.0
Polarization		Dual linear ±45°	
Nominal Impedance (Ohm)		50	
VSWR	1.5:1		
VSWR			1.5:1
Isolation between inputs (dB)	30		
Isolation between inputs (dB)			30
Inter band isolation (dB)		40	
Horizontal -3 dB beamwidth	85 ± 5°		85 ± 5°
Tracking, Horizontal plane, ±60° (dB)	<2.0		
Tracking, Horizontal plane, ±60° (dB)			<2.0
Electrical downtilt range (adjustable)	0° to 10°		0° to 8°
Vertical -3 dB beamwidth	14.3 ± 2.0°		6.6 ± 1°
Sidelobe suppression, Vertical 1 st upper (dB)	>17,16,15 x=0, 5, 10° MET		> 17, 16,15 x=0, 4, 8° MET
Vertical beam squint	<0.8°		<0.5°
First null-fill (dB)	<-25		<-25
Front-to-back ratio (dB)	>25		>27
Front-to-back ratio, total power (dB)	>20		>23
IM3, 2Tx@43dBm (dBc)	<-153		
IM3, 2Tx@43dBm (dBc)			<-153
IM7, 2Tx@43dBm (dBc)			<-160
Power Handling, Average per input (W)	400		250
Power Handling, Average total (W)	800		500

All specifications are subject to change without notice.
Contact your Powerwave representative for complete performance data.

Mechanical Specifications

Connector Type	4 x 7/16 DIN female
Connector Position	Bottom
Dimensions, HxWxD	1408mm x 280mm x 125mm (55"x11"x5")
Weight Including Brackets	15.8 kg (35 lbs)
Wind Load, Frontal, 42m/s Cd=1	435N (98 lbf)
Survival Wind Speed (m/s)	70 (156mph)
Lightning Protection	DC grounded
Radome Material	GRP
Radome Color	Light Gray
Mounting	Pre-mounted Standard Brackets
Packing Size	1550mm x 355mm x 255mm (61"x14"x10")

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Powerwave technologies

COVERAGE AND CAPACITY | TECHNOLOGY LEADERSHIP | GLOBAL PARTNER | INTEGRATED SOLUTIONS | QUALITY AND RELIABILITY

D031-08208 Rev A

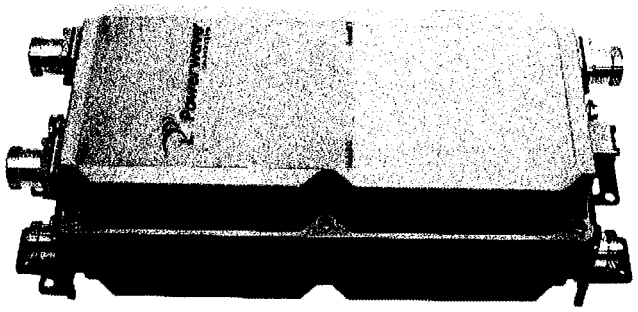
TT08-19DB111-001 TMA Twin Dual Band 850/1900 12 dB AISG 1.1

ELECTRICAL SPECIFICATIONS	
UL Frequency Range (MHz)	824-849 / 1850-1910
UL Rejection	SMR Rejection, >30 dB @ 851 MHz
UL Gain(dB)	12
UL Return Loss	>18 dB
UL Noise Figure	<1.7 dB, Typical
UL Output 3rd Order Intercept Point(dBm)	+25, Typical
UL Bypass Loss(dB)	2.5, Typical
UL Max Input Power (dBm)	+14
DL Frequency Range (MHz)	869-894 / 1930-1990
DL Return Loss	> 18 dB
DL Insertion Loss (dB)	850 MHz, 0.4; 1900 MHz, 0.5
Intermodulation	@ 2 x +43 dBm Tx carriers, in receive band, <-160 dBc, referred to antenna port
Input Voltage (V)	AISG Mode: 10-30; Current alarm mode: 8 -17
Alarm Functionality	AISG compatibe or in case of no AISG command received current alarm mode 270-290 mA
Power Consumption	< 1.8 W per branch @ 12V
Power Handling, RMS	850: >57 dBm; 1900: >55 dBm
AISG Compatibility	AISG 1.1

MECHANICAL SPECIFICATIONS	
Dimension HxWxD mm(ft)	360x169x137mm (14.2"x6.7"x5.4")
Weight(lbs)	<22
Colors	Off white (NCS 1502-R)
RF Connectors	DIN 7/16 female, long neck
Mounting Kit	Mounting kit for pole and wall is included

ENVIRONMENTAL SPECIFICATIONS	
Temperature Range	-40° C to +65° C (-40° F to + 149° F)
Operational	ETS 300 019-1-4
Transportation	ETS 300 019-1-2
Storage	ETS 300 019-1-1
Lightning Protection	3 kA 10/350 µs; 20 kA (Shield)
Housing	Aluminum
MTBF	>1 million hours (per TMA)
Ingress Protection	IP65 and IP68

APPROVAL AND TESTS	
Safety	EN 60950
EMC	3GPP: TS 25.113



*All specifications subject to change without notice. Contact your Powerwave representative for complete performance data.

Dual Band RET Unit

Dual band remote controlled electrical down-tilt (RET)

DB RET

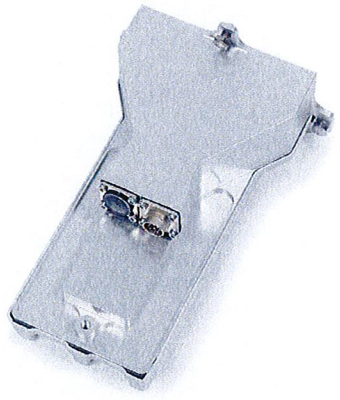
Part Number	Easy configuration	Outdoor Usage
7020.00	AISG Compatible	

The Dual band RET Unit is a part of the Powerwave RET System.

The Powerwave RET Dual band module consists of two stepping motors that can be connected to the positioning rods used for adjusting the electrical down tilt of Powerwave MET antennas.
Upon command from the MCU, the stepping motor moves the positioning rod up or down to achieve the desired antenna tilt angle.

The unit has dual RS-485 connectors for easy daisy chaining without need for external splitter.

The unit can be mounted on site on a dual band antenna that is already in place or be delivered mounted on a Powerwave antenna.



Dual Band Remote Controlled Electrical Down-tilt (RET)

Key Benefits:

- Field upgradeable with installed MET antennas
- Optional factory pre-mounting on MET antennas
- Integrated RS-485 splitter for easy daisy chaining
- Field proven vented design
- Fully integrated dual RET motor housing

ANTENNA SYSTEMS

BASE STATION SYSTEMS

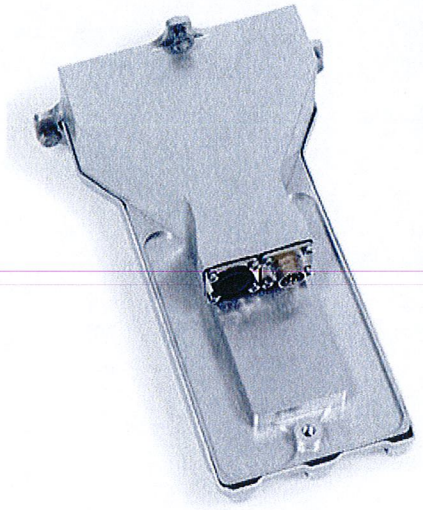
COVERAGE SYSTEMS

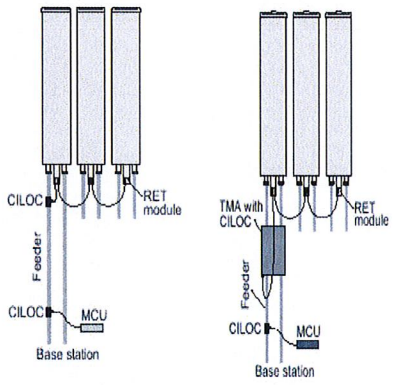
Dual Band Remote Electrical Tilt Unit

DB RET

Technical Specifications

Product Number	7020.00 (7032.00 for single motor version)
Power supply	+9 to30V
Current consumption:	
Start up surge	< 1mC
Current draw during Antenna tilting	< 500 mA at Vin <10V < 400 mA at Vin <19V < 250 mA at Vin >19V
All other operational states	< 100 mA at Vin <19V < 50 mA at Vin >19V
AISG Data Rate	9.6 kbps, 38.4kbps
Rod positioning accuracy	<±0.3mm
Weight	1 kg
Dimensions (W,L,H) (mm)	< 125 X 213 X 62 (excl mounting screws)
Connectors	
AISG output/ input	IEC 60130-9 (Ed. 3.0)
Protection Ground	M6 screw
Operation temperature range	-40 to +65C
Type Approvals	Conformity with the relevant provision(s)of the directives RTTE 99/5/EG and LVD 73/23/EEG.
MTBF	>500.000 hrs.
Ingress protection	IP55
Environmental	ETSI 300 019





Powerwave RET system is designed to meet the high requirements for reliability, flexibility and efficiency in remote control of tower-mounted telecommunication equipment.

The system consists of a Master Control Unit (MCU) that controls the Antenna Line Devices (ALDs) and supplies DC power to them via a common bus. ALDs are connected to the MCU using a separate ALD system cable or by using the existing RF feeders in your system.

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