ROBINSON & CC

EM-VER-083-130308

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

Also admitted in Massachusetts

March 6, 2013

Linda Roberts
Executive Director
Connecticut Siting Council
10 Franklin Square
New Britain, CT 06051

RECEIVED
MAR - 8 2013
CONNECTICUT
SITING COUNCIL

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

Dear Ms. Roberts:

Cellco Partnership d/b/a Verizon Wireless ("Cellco") currently maintains a wireless telecommunications facility on the roof of the existing office building at 213 Court Street in Middletown. Cellco's facility consists of twelve (12) wireless telecommunications antennas attached to the façade of the building, 179-feet above ground level. Equipment associated with the antennas is located inside the building. The building and underlying property are owned by Middlesex Mutual Assurance Co. The Council approved Cellco's 213 Court Street facility in 1990 (Docket No. 125) and retains jurisdiction over this installation.

Cellco now intends replace six (6) of its existing antennas with three (3) model BXA-80063-6CF cellular antennas and three (3) model BXA-171063-8CF AWS antennas, at the same 179-foot level on the building façade. Cellco also intends to install six (6) remote radio heads ("RRHs") behind its antennas and one (1) HYBRIFLEX™ fiber cable. Attached behind Tab 1 are the specifications for the replacement antennas, RRHs and HYBRIFLEX™ cable.

Please accept this letter as notification pursuant to R.C.S.A. § 16-50j-73, for construction that constitutes an exempt modification pursuant to R.C.S.A. § 16-50j-72(b)(2). In accordance with R.C.S.A. § 16-50j-73, a copy of this letter is being sent to Daniel T. Drew, Mayor of the City of Middletown. A copy of this letter is also being sent to Middlesex Mutual Assurance Co., the owner of the property on which the building is located.

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The planned modifications to the Court Street facility 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 an increase in the height of the existing structure. Cellco's replacement antennas and RRHs will be located at the same 179-foot level on the building façade.

2. The proposed modifications will not involve any change to ground-mounted equipment and, therefore, will not require the extension of the site boundary.

3. The proposed modifications will not increase noise levels at the facility by six decibels or more, or to levels that exceed state and local criteria.

4. The operation of the replacement antennas will not increase radio frequency (RF) emissions at the facility to a level at or above the Federal Communications Commission (FCC) adopted safety standard. A General Power Density table for Cellco's modified facility is included behind Tab 2.

5. The proposed modifications will not cause a change or alteration in the physical or environmental characteristics of the site.

6. The structure can support Cellco's proposed modifications. (*See* Structural Certification Letter attached behind Tab 3).

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

Sincerely,

Kenneth C. Baldwin

Enclosures
Copy to:
Daniel T. Drew, Middletown Mayor
Middlesex Mutual Assurance Co.
Sandy M. Carter

BXA-80063-6CF-EDIN-X

X-Pol | FET Panel | 63° | 14.5 dBd

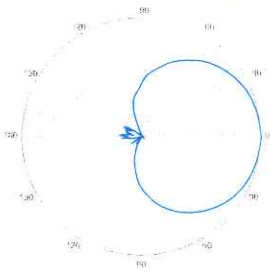
Replace "X" with desired electrical downtilt.

Antenna is also available with NE connector(s). Replace "EDIN" with "NE" in the model number when ordering.

Electrical Characteristics		
Frequency bands	806-900 MHz*	
*Optional frequency band for iDEN	806-941 MHz (specify when ordering)	
Polarization	±45°	
Horizontal beamwidth	63°	
Vertical beamwidth	11°	
Gain	14.5 dBd (16.6 dBi)	
Electrical downtilt (X)	0, 2, 3, 4, 5, 6, 8, 10	
Impedance	50Ω	
VSWR	≤1.4:1	
Upper sidelobe suppression (0°)	-18.2 dB	
Front-to-back ratio (+/-30°)	-36.3 dB	
Null fill	5% (-26.02 dB)	
Isolation between ports	< -25 dB	
Input power with EDIN connectors	500 W	
Input power with NE connectors	300 W	
Lightning protection	Direct Ground	
Connector(s)	2 Ports / EDIN or NE / Female / Center (Back)	
Mechanical Characteristics		
Dimensions Length x Width x Depth	1804 x 285 x 132 mm	71.0 x 11.2 x 5.2 in
Depth with z-brackets	172 mm	6.8 in
Weight without mounting brackets	7.9 kg	17 lbs
Survival wind speed	> 201 km/hr	> 125 mph
Wind area	Front: 0.51 m^2 Side: 0.24 m^2	Front: 5.5 ft^2 Side: 2.6 ft^2
Wind load @ 161 km/hr (100 mph)	Front: 759 N Side: 391 N	Front: 169 lbf Side: 89 lbf

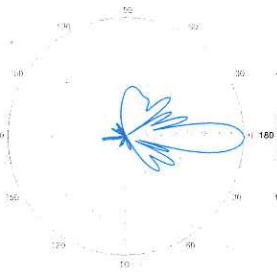
Mounting Options	Part Number	Fits Pipe Diameter	Weight
3-Point Mounting & Downtilt Bracket Kit	36210008	40-115 mm 1.57-4.5 in	6.9 kg 15.2 lbs
Concealment Configurations	For concealment configurations, order BXA-80063-6CF-EDIN-X-FP		

BXA-80063-6CF-EDIN-X



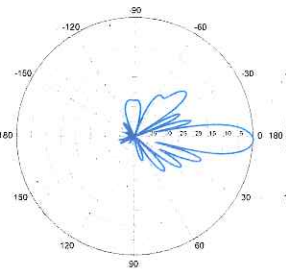
Horizontal

BXA-80063-6CF-EDIN-0



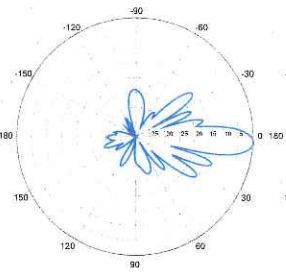
0° | Vertical

BXA-80063-6CF-EDIN-2



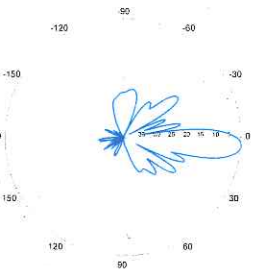
2° | Vertical

BXA-80063-6CF-EDIN-3



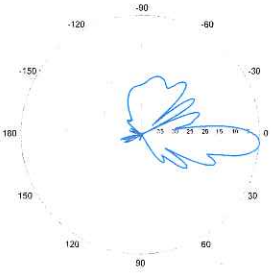
3° | Vertical

BXA-80063-6CF-EDIN-4



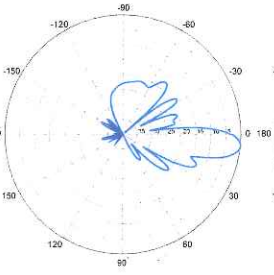
4° | Vertical

BXA-80063-6CF-EDIN-5



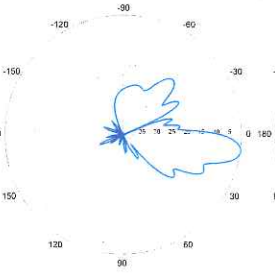
5° | Vertical

BXA-80063-6CF-EDIN-6



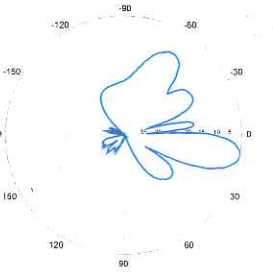
6° | Vertical

BXA-80063-6CF-EDIN-8



8° | Vertical

BXA-80063-6CF-EDIN-10



10° | Vertical

Quoted performance parameters are provided to offer typical or range values only and may vary as a result of normal manufacturing and operational conditions. Extreme operational conditions and/or stress on structural supports is beyond our control. Such conditions may result in damage to this product. Improvements to product may be made without notice.

Amphenol ANTENNA SOLUTIONS

BXA-171063-8CF-EDIN-X

X-Pol | FET Panel | 63° | 17.4 dBi

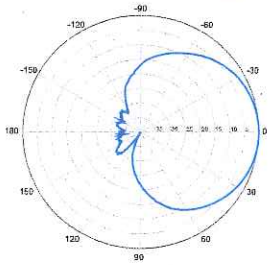
Replace "X" with desired electrical downtilt.

Antenna is also available with NE connector(s). Replace "EDIN" with "NE" in the model number when ordering.

Electrical Characteristics	1710-2170 MHz		
Frequency bands	1710-1880 MHz	1850-1990 MHz	1920-2170 MHz
Polarization	±45°	±45°	±45°
Horizontal beamwidth	68°	65°	60°
Vertical beamwidth	7°	7°	7°
Gain	14.5 dBd / 16.6 dBi	14.9 dBd / 17.0 dBi	15.3 dBd / 17.4 dBi
Electrical downtilt (X)	0, 2, 4, 8		
Impedance	50Ω		
VSWR	≤1.5:1		
First upper sidelobe	< -17 dB		
Front-to-back ratio	> 30 dB		
In-band isolation	> 25 dB		
IM3 (20W carrier)	< -150 dBc		
Input power	300 W		
Lightning protection	Direct Ground		
Connector(s)	2 Ports / EDIN or NE / Female / Center (Back)		
Operating temperature	-40° to +60° C / -40° to +140° F		
Mechanical Characteristics			
Dimensions Length x Width x Depth	1225 x 154 x 105 mm		48.2 x 6.1 x 4.1 in
Depth with t-brackets	133 mm		5.2 in
Weight without mounting brackets	4.2 kg		9.2 lbs
Survival wind speed	296 km/hr		184 mph
Wind area	Front: 0.19 m² Side: 0.14 m²		Front: 2.0 ft² Side: 1.5 ft²
Wind load @ 161 km/hr (100 mph)	Front: 281 N Side: 223 N		Front: 63 lbf Side: 50 lbf

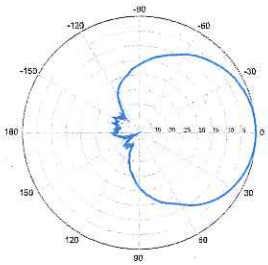
Mounting Options	Part Number	Fits Pipe Diameter	Weight
2-Point Mounting Bracket Kit	26799997	50-102 mm 2.0-4.0 in	2.3 kg 5 lbs
2-Point Mounting & Downtilt Bracket Kit	26799999	50-102 mm 2.0-4.0 in	3.6 kg 8 lbs
Concealment Configurations	For concealment configurations, order BXA-171063-8CF-EDIN-X-FP		

BXA-171063-8CF-EDIN-X



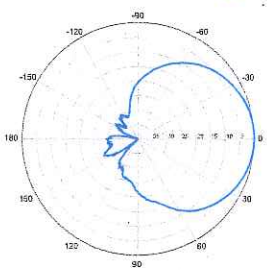
Horizontal | 1710-1880 MHz

BXA-171063-8CF-EDIN-X



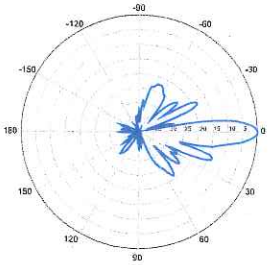
Horizontal | 1850-1990 MHz

BXA-171063-8CF-EDIN-X



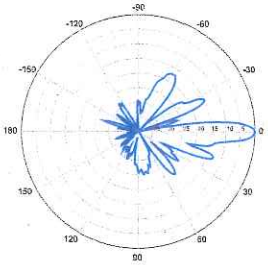
Horizontal | 1920-2170 MHz

BXA-171063-8CF-EDIN-0



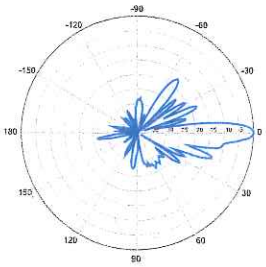
0° | Vertical | 1710-1880 MHz

BXA-171063-8CF-EDIN-0



0° | Vertical | 1850-1990 MHz

BXA-171063-8CF-EDIN-0



0° | Vertical | 1920-2170 MHz

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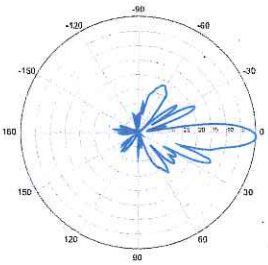
BXA-171063-8CF-EDIN-X

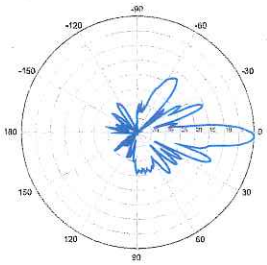
X-Pol | FET Panel | 63° | 17.4 dBi

BXA-171063-8CF-EDIN-2



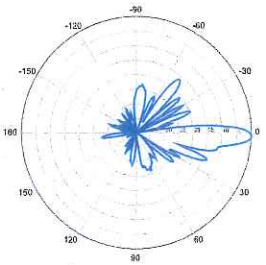
2° | Vertical | 1710-1880 MHz

BXA-171063-8CF-EDIN-2



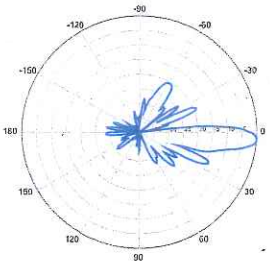
2° | Vertical | 1850-1990 MHz

BXA-171063-8CF-EDIN-2



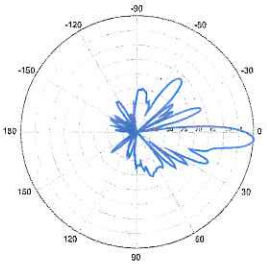
2° | Vertical | 1920-2170 MHz

BXA-171063-8CF-EDIN-4



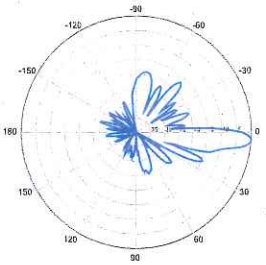
4° | Vertical | 1710-1880 MHz

BXA-171063-8CF-EDIN-4



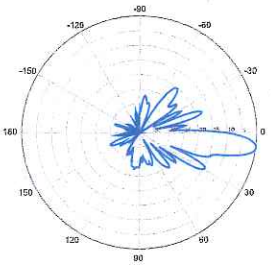
4° | Vertical | 1850-1990 MHz

BXA-171063-8CF-EDIN-4



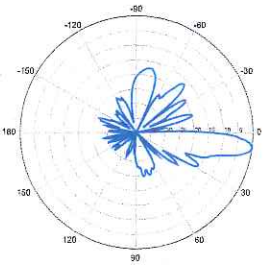
4° | Vertical | 1920-2170 MHz

BXA-171063-8CF-EDIN-8



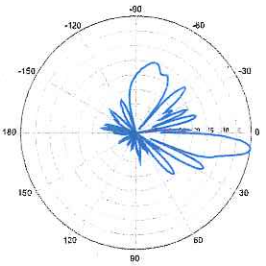
8° | Vertical | 1710-1880 MHz

BXA-171063-8CF-EDIN-8



8° | Vertical | 1850-1990 MHz

BXA-171063-8CF-EDIN-8



8° | Vertical | 1920-2170 MHz

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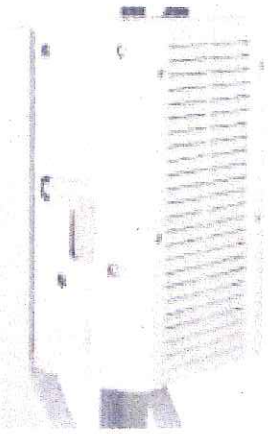
Alcatel-Lucent RRH2x40-07-U

REMOTE RADIO HEAD

The Alcatel-Lucent RRH2x40-07-U is a high-power, small form-factor Remote Radio Head (RRH) operating in the North American Digital Dividend / 700MHz frequency band (3GPP Band 13). The Alcatel-Lucent RRH2x40-07-U is designed with an eco-efficient approach, providing operators with the means to achieve high quality and capacity coverage with minimum site requirements.



A distributed eNodeB expands deployment options by using two components, a Base Band Unit (BBU) containing the digital assets and a separate RRH containing the radio-frequency (RF) elements. This modular design optimizes available space and allows the main components of an eNodeB to be installed separately, within the same site or several kilometres apart.

The Alcatel-Lucent RRH2x40-07-U is linked to the BBU by an optical-fiber connection carrying downlink and uplink digital radio signals along with operations, administration and maintenance (OA&M) information. The Alcatel-Lucent RRH2x40-07-U has two transmit RF paths, 40 W RF output power per transmit path, and is designed to manage up to two-way receive diversity. The device is ideally suited to support macro coverage, with multiple-input multiple-output (MIMO) 2x2 operation in up to 10 MHz of bandwidth.

The Alcatel-Lucent RRH2x40-07-U is designed to make available all the benefits of a distributed eNodeB, with excellent RF characteristics, with low capital expenditures (CAPEX) and low operating expenditures (OPEX). The limited space available in some sites may prevent the installation of traditional single-cabinet BTS equipment or require costly cranes to be employed, leaving coverage holes. However, many of these sites can host an Alcatel-Lucent RRH2x40-07-U installation, providing more flexible site selection and improved network quality along with greatly reduced installation time and costs.

Fast, low-cost installation and deployment

The Alcatel-Lucent RRH2x40-07-U is a zero-footprint solution and operates noise-free, simplifying negotiations with site property owners and minimizing environmental impacts. Installation can easily be done by a single person because the Alcatel-Lucent RRH2x40-07-U is compact and weights less than 23 kg (50 lb), eliminating the need for a crane to hoist the BTS cabinet to the rooftop. A site can be in operation in less than one day — a fraction of the time required for a traditional BTS.

Excellent RF performance

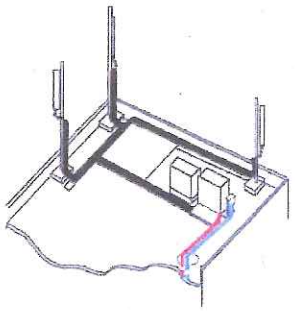
Because of its small size and weight, the Alcatel-Lucent RRH2x40-07-U can be installed close to the antenna. Operators can therefore locate the Alcatel-Lucent RRH2x40-07-U where RF engineering is deemed ideal, minimizing trade-offs between available sites and RF optimum sites. The RF feeder cost and installation costs are reduced or eliminated, and there is no need for a Tower Mounted Amplifier (TMA) because losses introduced by the RF feeder are greatly reduced. The Alcatel-Lucent RRH2x40-07-U provides more RF power while at the same time consuming less electricity.

Features

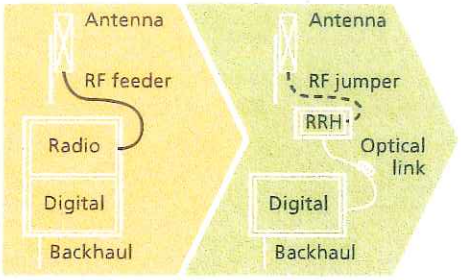
- Zero-footprint deployment
- Easy installation, with a lightweight unit can be carried and set up by one person
- Optimized RF power, with flexible site selection and elimination of a TMA
- Convection-cooled (fanless), noise-free, and heaterless unit
- Best-in-class power efficiency, with significantly reduced energy consumption

Benefits

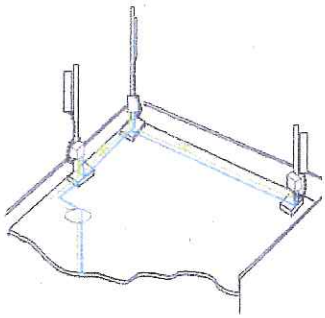
- Leverages existing real estate with lower site costs
- Reduces installation costs, with fewer installation materials and simplified logistics
- Decreases power costs and minimizes environmental impacts, with the potential for eco-sustainable power options
- Improves RF performance and adds flexibility to network planning



Macro



RRH for space-constrained cell sites



Distributed

Technical specifications

Physical dimensions

- Height: 390 mm (15.4 in.)
- Width: 380 mm (15 in.)
- Depth: 210 mm (8.2 in.)
- Weight (without mounting kit): less than 23 kg (50 lb)

Power

- Power supply: -48V

Operating environment

- Outdoor temperature range:
  - ¬ With solar load: -40°C to +50°C (-40°F to +122°F)
  - ¬ Without solar load: -40°C to +55°C (-40°F to +131°F)
- Passive convection cooling (no fans)
- Enclosure protection
  - ¬ IP65 (International Protection rating)

RF characteristics

- Frequency band: 700 MHz; 3GPP Band 13
- Bandwidth: up to 10 MHz
- RF output power at antenna port:
  - ¬ 40 W nominal RF power for each Tx port
- Rx diversity: 2-way or 4-way
- Noise figure: below 2.5 dB typical
- ALD features
  - ¬ TMA
  - ¬ Remote electrical tilt (RET) support (AISG v2.0)

Optical characteristics

Type/number of fibers

- Up to 3.12 Gb/s line bit rate
- Single-mode variant
  - ¬ One SM fiber (9/125 µm) per RRH2x, carrying UL and DL using CWDM (at 1550/1310 nm)
- Multi-mode variant
  - ¬ Two MM fibers (50/125 µm) per RRH2x: one carrying UL, the other carrying DL (at 850 nm)

Optical fiber length

- Up to 500 m (0.31 mi), using MM fiber
- Up to 20 km (12.43 mi), using SM fiber

Alarms and ports

- Six external alarms
- Two optical ports to support daisy-chaining

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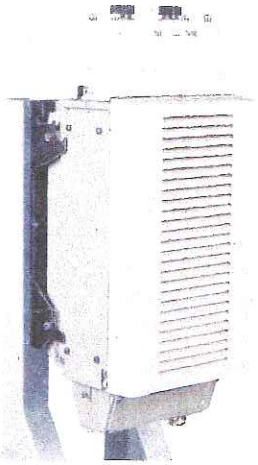
CPG2809100913 (09)

Alcatel·Lucent

Alcatel-Lucent RRH2x40-AWS

REMOTE RADIO HEAD

The Alcatel-Lucent RRH2x40-AWS is a high-power, small form-factor Remote Radio Head (RRH) operating in the AWS frequency band (1700/2100MHz - 3GPP Band 4). The Alcatel-Lucent RRH2x40-AWS is designed with an eco-efficient approach, providing operators with the means to achieve high quality and capacity coverage with minimum site requirements.



A distributed eNodeB expands deployment options by using two components, a Base Band Unit (BBU) containing the digital assets and a separate RRH containing the radio-frequency (RF) elements. This modular design optimizes available space and allows the main components of an eNodeB to be installed separately, within the same site or several kilometres apart.

The Alcatel-Lucent RRH2x40-AWS is linked to the BBU by an optical-fiber connection carrying downlink and uplink digital radio signals along with operations, administration and maintenance (OA&M) information. The Alcatel-Lucent RRH2x40-AWS has two transmit RF paths, 40 W RF output power per transmit path, and is designed to manage up to four-way receive diversity. The device is ideally suited to support macro coverage, with multiple-input multiple-output (MIMO) 2x2 operation in up to 20 MHz of bandwidth.

The Alcatel-Lucent RRH2x40-AWS is designed to make available all the benefits of a distributed eNodeB, with excellent RF characteristics, with low capital expenditures (CAPEX) and low operating expenditures (OPEX). The limited space available in some sites may prevent the installation of traditional single-cabinet BTS equipment or require costly cranes to be employed, leaving coverage holes. However, many of these sites can host an Alcatel-Lucent RRH2x40-AWS installation, providing more flexible site selection and improved network quality along with greatly reduced installation time and costs.

Fast, low-cost installation and deployment

The Alcatel-Lucent RRH2x40-AWS is a zero-footprint solution and operates noise-free, simplifying negotiations with site property owners and minimizing environmental impacts. Installation can easily be done by a single person because the Alcatel-Lucent RRH2x40-AWS is compact and weighs less than 20 kg (44 lb), eliminating the need for a crane to hoist the BTS cabinet to the rooftop. A site can be in operation in less than one day — a fraction of the time required for a traditional BTS.

Excellent RF performance

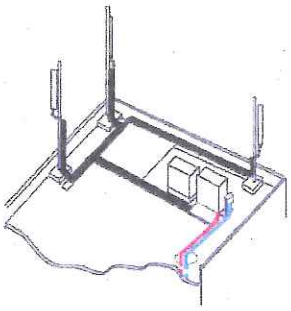
Because of its small size and weight, the Alcatel-Lucent RRH2x40-AWS can be installed close to the antenna. Operators can therefore locate the Alcatel-Lucent RRH2x40-AWS where RF engineering is deemed ideal, minimizing trade-offs between available sites and RF optimum sites. The RF feeder cost and installation costs are reduced or eliminated, and there is no need for a Tower Mounted Amplifier (TMA) because losses introduced by the RF feeder are greatly reduced.
The Alcatel-Lucent RRH2x40-AWS provides more RF power while at the same time consuming less electricity.

Features

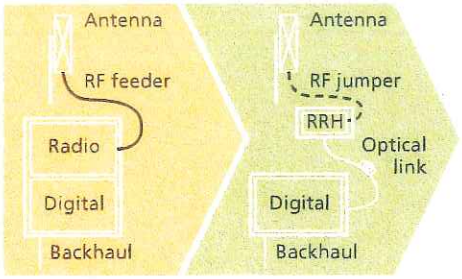
- Zero-footprint deployment
- Easy installation, with a lightweight unit can be carried and set up by one person
- Optimized RF power, with flexible site selection and elimination of a TMA
- Convection-cooled (fanless)
- Noise-free
- Best-in-class power efficiency, with significantly reduced energy consumption

Benefits

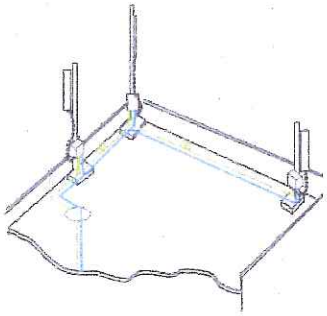
- Leverages existing real estate with lower site costs
- Reduces installation costs, with fewer installation materials and simplified logistics
- Decreases power costs and minimizes environmental impacts, with the potential for eco-sustainable power options
- Improves RF performance and adds flexibility to network planning



Macro



RRH for space-constrained cell sites



Distributed

Technical specifications

Physical dimensions

- Height: 620 mm (24.4 in.)
- Width: 270 mm (10.63 in.)
- Depth: 170m (6.7 in.)
- Weight (without mounting kit): less than 20 kg (44 lb)

Power

- Power supply: -48VDC

Operating environment

- Outdoor temperature range:
  - ¬ With solar load: -40°C to +50°C (-40°F to +122°F)
  - ¬ Without solar load: -40°C to +55°C (-40°F to +131°F)
- Passive convection cooling (no fans)
- Enclosure protection
  - ¬ IP65 (International Protection rating)

RF characteristics

- Frequency band: 1700/2100 MHz (AWS); 3GPP Band 4
- Bandwidth: up to 20 MHz
- RF output power at antenna port: 40 W nominal RF power for each Tx port
- Rx diversity: 2-way or 4-way with optional Rx Diversity module
- Noise figure: below 2.0 dB typical
- Antenna Line Device features
  - ¬ TMA and Remote electrical tilt (RET) support via AISG v2.0

Optical characteristics

Type/number of fibers

- Single-mode variant
  - ¬ One Single Mode Single Fiber per RRH2x, carrying UL and DL using CWDM
  - ¬ Single mode dual fiber (SM/DF)
- Multi-mode variant
  - ¬ Two Multi-mode fibers per RRH2x: one carrying UL, the other carrying DL

Optical fiber length

- Up to 500 m (0.31 mi), using MM fiber
- Up to 20 km (12.43 mi), using SM fiber

Digital Ports and Alarms

- Two optical ports to support daisy-chaining
- Six external alarms

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CPG2809100912 (09)

Alcatel·Lucent

Product Data Sheet HB158-1-08U8-S8J18

HYBRIFLEX™ RRH Hybrid Feeder Cabling Solution, 1-5/8", Single-Mode Fiber

Product Description

RFS' HYBRIFLEX Remote Radio Head (RRH) hybrid feeder cabling solution combines optical fiber and DC power for RRHs in a single lightweight aluminum corrugated cable, making it the world's most innovative solution for RRH deployments.

It was developed to reduce installation complexity and costs at Cellular sites. HYBRIFLEX allows mobile operators deploying an RRH architecture to standardize the RRH installation process and eliminate the need for and cost of cable grounding. HYBRIFLEX combines optical fiber (multi-mode or single-mode) and power in a single corrugated cable. It eliminates the need for junction boxes and can connect multiple RRHs with a single feeder. Standard RFS CELLFLEX® accessories can be used with HYBRIFLEX cable. Both pre-connectorized and on-site options are available.

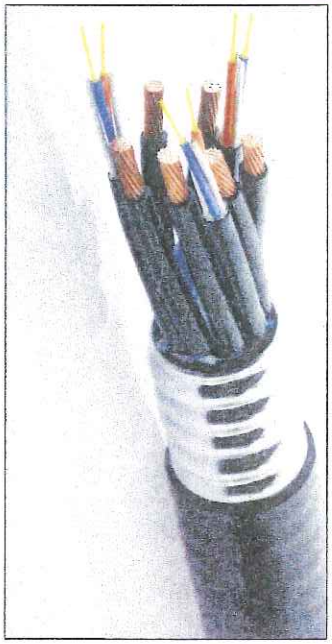


Figure 1: HYBRIFLEX Series

Features/Benefits

- Aluminum corrugated armor with outstanding bending characteristics – minimizes installation time and enables mechanical protection and shielding
- Same accessories as 1 5/8" coaxial cable
- Outer conductor grounding – Eliminates typical grounding requirements and saves on installation costs
- Lightweight solution and compact design – Decreases tower loading
- Robust cabling – Eliminates need for expensive cable trays and ducts
- Installation of tight bundled fiber optic cable pairs directly to the RRH – Reduces CAPEX and wind load by eliminating need for interconnection
- Optical fiber and power cables housed in single corrugated cable – Saves CAPEX by standardizing RRH cable installation and reducing installation requirements
- Outdoor polyethylene jacket – Ensures long-lasting cable protection

Technical Specifications

Structure			
Outer Conductor Armor:	Corrugated Aluminum	[mm (in)]	46.5 (1.83)
Jacket:	Polyethylene, PE	[mm (in)]	50.3 (1.98)
UV-Protection:	Individual and External Jacket		Yes
Mechanical Properties			
Weight, Approximate		[kg/m (lb/ft)]	1.9 (1.30)
Minimum Bending Radius, Single Bending		[mm (in)]	200 (8)
Minimum Bending Radius, Repeated Bending		[mm (in)]	500 (20)
Recommended/Maximum Clamp Spacing		[m (ft)]	1.0 / 1.2 (3.25 / 4.0)
Electrical Properties			
DC-Resistance Outer Conductor Armor		[Ω/km (Ω/1000ft)]	068 (0.205)
DC-Resistance Power Cable, 8.4mm² (8AWG)		[Ω/km (Ω/1000ft)]	2.1 (0.307)
Fiber Optic Properties			
Version			Single-mode OM3
Quantity, Fiber Count			16 (8 pairs)
Core/Clad		[µm]	50/125
Primary Coating (Acrylate)		[µm]	245
Buffer Diameter, Nominal		[µm]	900
Secondary Protection, Jacket, Nominal		[mm (in)]	2.0 (0.08)
Minimum Bending Radius		[mm (in)]	104 (4.1)
Insertion Loss @ wavelength 850nm		dB/km	3.0
Insertion Loss @ wavelength 1310nm		dB/km	1.0
Standards (Meets or exceeds)			UL94-V0, UL1666 RoHS Compliant
DC Power Cable Properties			
Size (Power)		[mm² (AWG)]	8.4 (8)
Quantity, Wire Count (Power)			16 (8 pairs)
Size (Alarm)		[mm² (AWG)]	0.8 (18)
Quantity, Wire Count (Alarm)			4 (2 pairs)
Type			UV protected
Strands			19
Primary Jacket Diameter, Nominal		[mm (in)]	6.8 (0.27)
Standards (Meets or exceeds)			NFPA 130, ICEA S-95-658 UL Type XHHW-2, UL 44 UL-LS Limited Smoke, UL VW-1 IEEE-383 (1974), IEEE1202/FT4 RoHS Compliant
Environment			
Installation Temperature		[°C (°F)]	-40 to +65 (-40 to149)
Operation Temperature		[°C (°F)]	-40 to +65 (-40 to149)

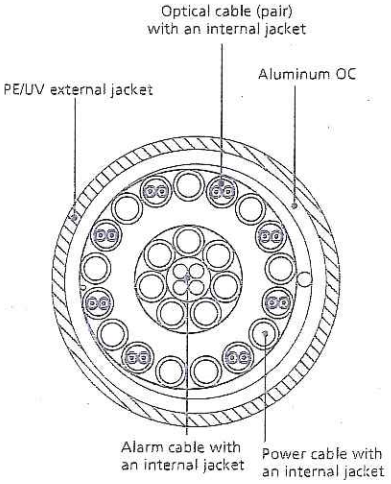


Figure 2: Construction Detail

* This data is provisional and subject to change.

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

Site Name: Middletown, CT
Cumulative Power Density

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)	(%)
VZW PCS	1970	11	323	3553	179.1	0.0398	1.0	3.98%
VZW Cellular	869	9	302	2718	179.1	0.0305	0.579333333	5.26%
VZW AWS	2145	1	1750	1750	179.1	0.0196	1.0	1.96%
VZW 700	698	1	1050	1050	179.1	0.0118	0.465333333	2.53%

Total Percentage of Maximum Permissible Exposure 13.73%

*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

Absolute worst case maximum values used.

CENTEK engineering

Centered on Solutions℠

January 16, 2013

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

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

CENTEK Project No. 12124.CO44

Dear Mr. Tyurin,

Centek Engineering, Inc. has reviewed the proposed Verizon Wireless LTE antenna upgrade at the above referenced site. The purpose of the review is to determine the structural adequacy of the existing twelve (12) story host building to support the proposed modified antenna configuration. The existing installation consists of three (3) antenna sectors of four antennas each (total of 12) flush mounted to the façade of the existing building. The review considered the effects of wind load, dead load, ice load and seismic forces in accordance with the 2005 Connecticut State Building Code as amended by the 2009 Connecticut State Supplement. Visual verification of the existing antenna installation was conducted by Centek Engineering personnel during January 2013.

The existing, proposed and future Verizon Wireless loads considered in this analysis consist of the following:

- Verizon (Existing to Remain):
  Coax: Twelve (12) 1-5/8-in dia. coaxial cables routed along the roof.
- Verizon (Existing to Remain – Alpha and Gamma Sectors):
  Antennas: Two (2) LNX-6514DS-T4M panel antennna, two (2) RYMSA MGD3-800T0 panel antennas and four (4) RFS FD9R6004/2C-3L Diplexers pipe mounted to the façade of the existing building with a RAD center elevation of 179-ft +/- AGL.
- **Verizon (Existing to Remove – Alpha and Gamma Sectors):**
  Antennas: Four (4) Andrew DB846F65ZAXYpanel antennas façade mounted to the existing building with a RAD center elevation of 179-ft +/- AGL.
- **Verizon (Proposed – Alpha and Gamma Sectors):**
  Antennas: Two (2) Antel BXA-80063-6CF panel antennas and two (2) Antel BXA-171063-8CF panel antennas pipe mounted to the façade of the existing building with a RAD center elevation of 179-ft +/- AGL.
  Misc. Equipment: Two (2) Alcatel-Lucent RRH2x40-AWS Remote Radio Heads, two (2) Alcatel-Lucent RRH2x40-07-U Remote Radio Heads and two (2) RFS DB-E1-3B-8AB-0Z sector distribution boxes mounted to two (2) Commscope non-penetrating ballast roof mount frames (P/N RR-TFS).

- Verizon (Existing to Remain – Beta Sector):
  Antennas: One (1) LNX-6514DS-T4M panel antennna, one (1) RYMSA MGD3-800T0 panel antenna and two (2) RFS FD9R6004/2C-3L Diplexers pipe mounted to the façade of the existing building with a RAD center elevation of 179-ft +/- AGL.

- **Verizon (Existing to Remove – Beta Sector):**
  Antennas: Two (2) Antel LPA-80080-6CF antennas façade mounted to the existing building with a RAD center elevation of 179-ft +/- AGL.

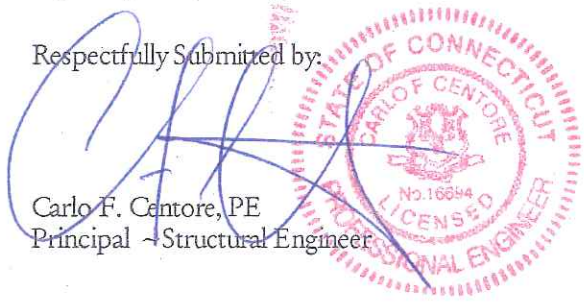
- **Verizon (Proposed – Beta Sector):**
  Antennas: One (1) Antel BXA-80063-6CF panel antenna and one (1) Antel BXA-171063-8CF panel antennas pipe mounted to the façade of the existing building with a RAD center elevation of 179-ft +/- AGL.
  Misc. Equipment: One (1) Alcatel-Lucent RRH2x40-AWS Remote Radio Head, one (1) Alcatel-Lucent RRH2x40-07-U Remote Radio Head and one (1) RFS DB-E1-3B-8AB-0Z sector distribution box mounted to one (1) Commscope non-penetrating ballast roof mount frame (P/N RR-TFS).

  Misc. Equipment: One (1) RFS DB-T1-6Z-8AB-0Z main distribution box mounted to the existing Verizon equipment building steel dunnage frame handrail.
  Cables: One (1) 1-5/8" dia. main Hybriflex Fiber with power cable and three (3) 1-1/4" dia. AWS Fiber with power jumper cables to follow the route of the existing cable tray system.

The proposed antenna installation meets the requirements of the 2005 Connecticut State Building Code considering the basic wind speed (3-second gust) of 105 mph as required in Appendix K of the Connecticut supplement per Table 1609.3.1. Our findings are based on the assumption that the hosting structure, all structural members and appurtenances were properly designed, detailed, fabricated, installed and have been properly maintained since erection.

In conclusion, the proposed Verizon antenna upgrade will not negatively impact the structural integrity of the existing antenna support structure or host building. If there are any questions regarding this matter, please feel free to call.

Respectfully Submitted by:



Carlo F. Centore, PE
Principal ~ Structural Engineer