Ritter COMMUNICATIONS phone 870.336.3434 1.888.336.4249 fax 870.336.3401 office 2400 Ritter Drive, Jonesboro, AR 72401 www.getritter.info

January 24, 2020

City of Jonesboro
Planning & Zoning Department
Board of Zoning Adjustment
300 S. Church St.
Jonesboro, AR 72403

Dear Board of Zoning Adjustment:

Ritter Communications is requesting an exemption from the City of Jonesboro Ordinance-19:044 regarding Small Wireless Communications Facility Regulation. We are requesting this exemption based on the function and size of the antenna proposed at the intersection of Quality Way Drive and Post Road.

Small Wireless Facility Regulations are directed for the use of mobile wireless equipment. The antenna application proposed by Ritter Communications is designed for point to point use—meaning the end user will have hardwired equipment in buildings, not mobile applications. This network system is designed to facilitate better low-cost options for High speed internet in the Industrial Park at a reduced overhead cost to the customer and to Ritter Communications.

In reviewing State Bill 602 (25, ii, iii) and the City of Jonesboro Ord-19:044 (1.43.2 & 1.43.3), an antenna classed as a "Small Wireless Facility" must meet the following stipulations:

- The antenna volume size must be no larger than 3 cubic feet,
- The total volume of all associated equipment with the antenna must not exceed 28 cubic feet in volume.

Ritter Communications' antenna is approximately 25 cubic feet and all associated equipment volume will exceed 30 cubic feet.

If an exemption from the ordinance cannot be granted, we request consideration of the following variances to allow the installation of the proposed antenna at the intersection of Quality Way Drive and Post Road.

- City ordinance section 2.3.9.1 (Collocation Preference) states that a new pole cannot be installed within 100 feet of a suitable pole; therefore, the propose antenna must be a collocation according to the City Ordinance. After discussions with CWL about the application and location, CWL has agreed that a collocation pole is not available at this location. They will not require a collocation permit for this antenna. See attached email from Susan Merideth, PE – Engineering Services Director for CWL.

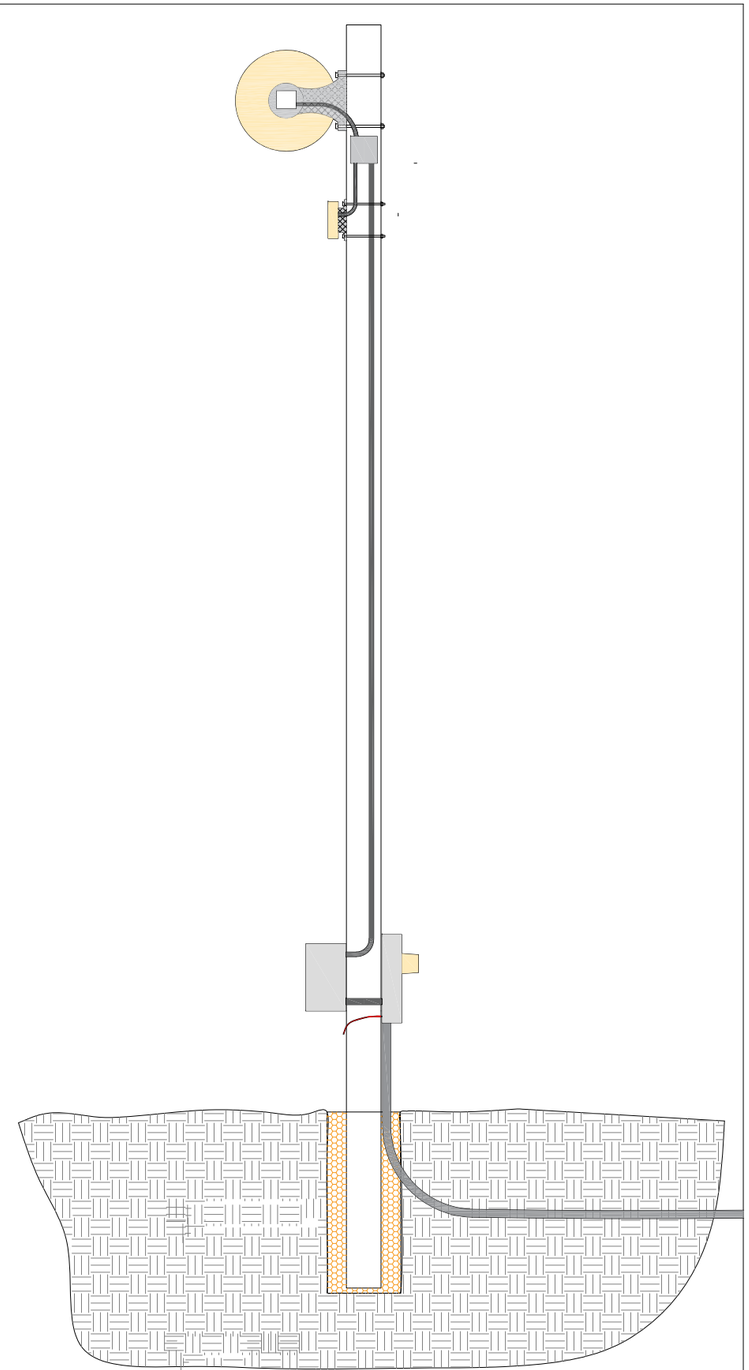
- City ordinance section 2.4.5.1 (Concealment and Enclosures) states that equipment should be concealed. As shown in the diagram, the shape and size of the proposed antenna is not conducive to have an enclosure to conceal the equipment. This would only make the antenna stand out more and create a larger issue with supporting the equipment.

- City ordinance section 2.4.5.4 (Extensions) states that small wireless facilities will not be mounted on arms that extend more than 30 inches from a pole unless camouflaged to appear as an integral part of a streetlight. As shown in the diagram, the shape and size of the proposed antenna and mounting equipment will extend more than 30 inches from the pole and cannot be made to look like an integral part of a streetlight.

Thank you for your time and consideration.

David Jordan, 356 Solutions – Consultant for Ritter Communications

19.65.00340 - WIRELESS
BROADBAND POLE
LAKE CITY TO INDUSTRIAL TRIAL
2950-sct QUALITY WAY DR.
JONESBORO, AR 72401
35.807824,-90.563945



Ritter COMMUNICATIONS
30 ELM ST. Marked Tree, Arkansas 72365 Office: (870) 358-4400

356 SOLUTIONS
UTILITY & COMMUNICATION INFRASTRUCTURE PLANNING, DESIGN, AND CONSTRUCTION

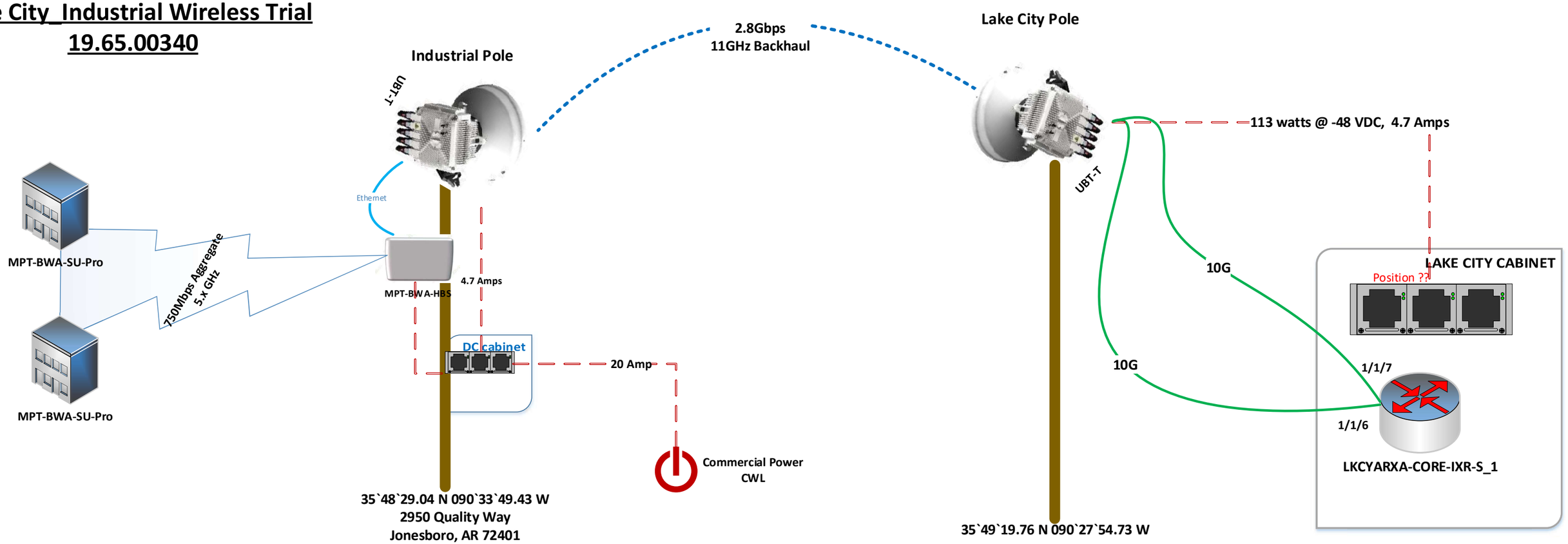
PO Box 2770
Jonesboro, Arkansas 72402
Phone 870-926-2855

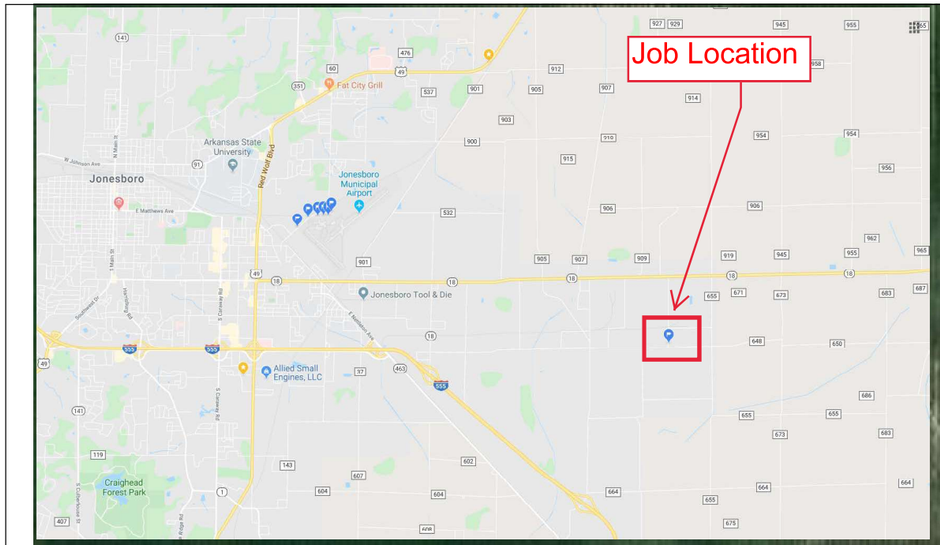
WO NUMBER:
19.65.00340 - 2950 QUALITY WAY DR.

JOB DESCRIPTION
LAKE CITY TO INDUSTRIAL WIRELESS

Example: Illustration for Reference in Paragraph 2 of Narrative Letter.

Lake City_Industrial Wireless Trial
19.65.00340





Arkansas 811
Know what's below.
Call before you dig.

ASSEMBLY UNITS	QTY	AS BUILT	ASSEMBLY UNITS	QTY	AS BUILT	ASSEMBLY UNITS	QTY	AS BUILT

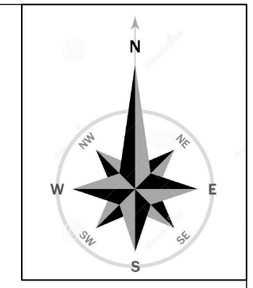
Ritter COMMUNICATIONS
30 ELM ST. Marked Tree, Arkansas 72365
Office: (870) 358-4400

356 SOLUTIONS
PO Box 2770
Jonesboro, Arkansas 72402
Phone 870-926-2855

WO NUMBER:
19.65.00340 - CW Post and Quality Way

JOB DESCRIPTION
RADIO ANTENNA POLE

Trinity Lighting Inc
2902 QUALITY WAY
Jonesboro, AR 72401



R/W

40'

2'

10'

#1
A50-3
UBT_T
MPT-BWA
DC Cabinet
Meter/Load Center
P2-1
see diagram for spacing

35.807824,-90.563945
2950 Quality Way

CWL Pole
Transformer
for Power

CWL Guy Pole
Secondary
Service to
Ritter Pole

QUALITY WAY

CW POST RD

TrinityRail Maintenance Services - 4034
3662 9009 CW POST RD
JONESBORO , AR 72401

Arkansas 811
Know what's below.
Call before you dig.

ASSEMBLY UNITS	QTY	AS BUILT	ASSEMBLY UNITS	QTY	AS BUILT	ASSEMBLY UNITS	QTY	AS BUILT
A50-3 (Pole)	1		DC Cabinet (32x24x19)	1		2" Pipe Clamps	6	
PM2-1 (2 Grnd Rod System)	1		Meter/Load Center	1		#6 Grnd Wire CU	20'	
UBT-T (Antenna w/ Interface)	1		36" Sch 80 - 2" - 90's	2		SB2 Chat (Pole Backfill)	1 yd^3	
MPT-BWA (Sub Antenna)	1		2" Sch 80 Conduit (20' Sticks)	2				

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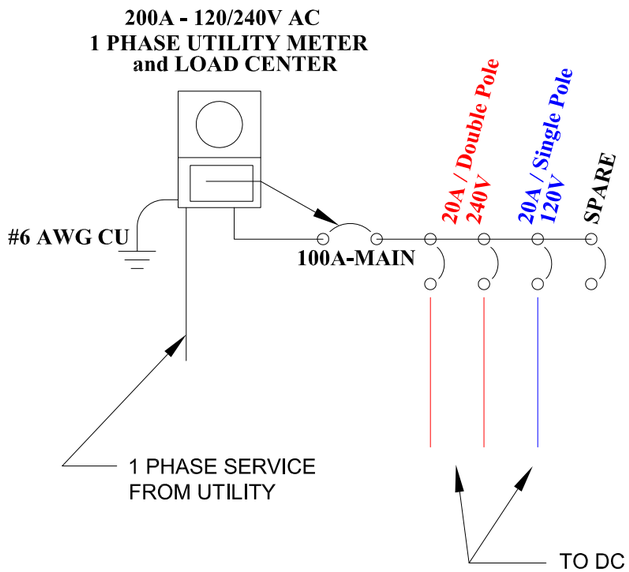
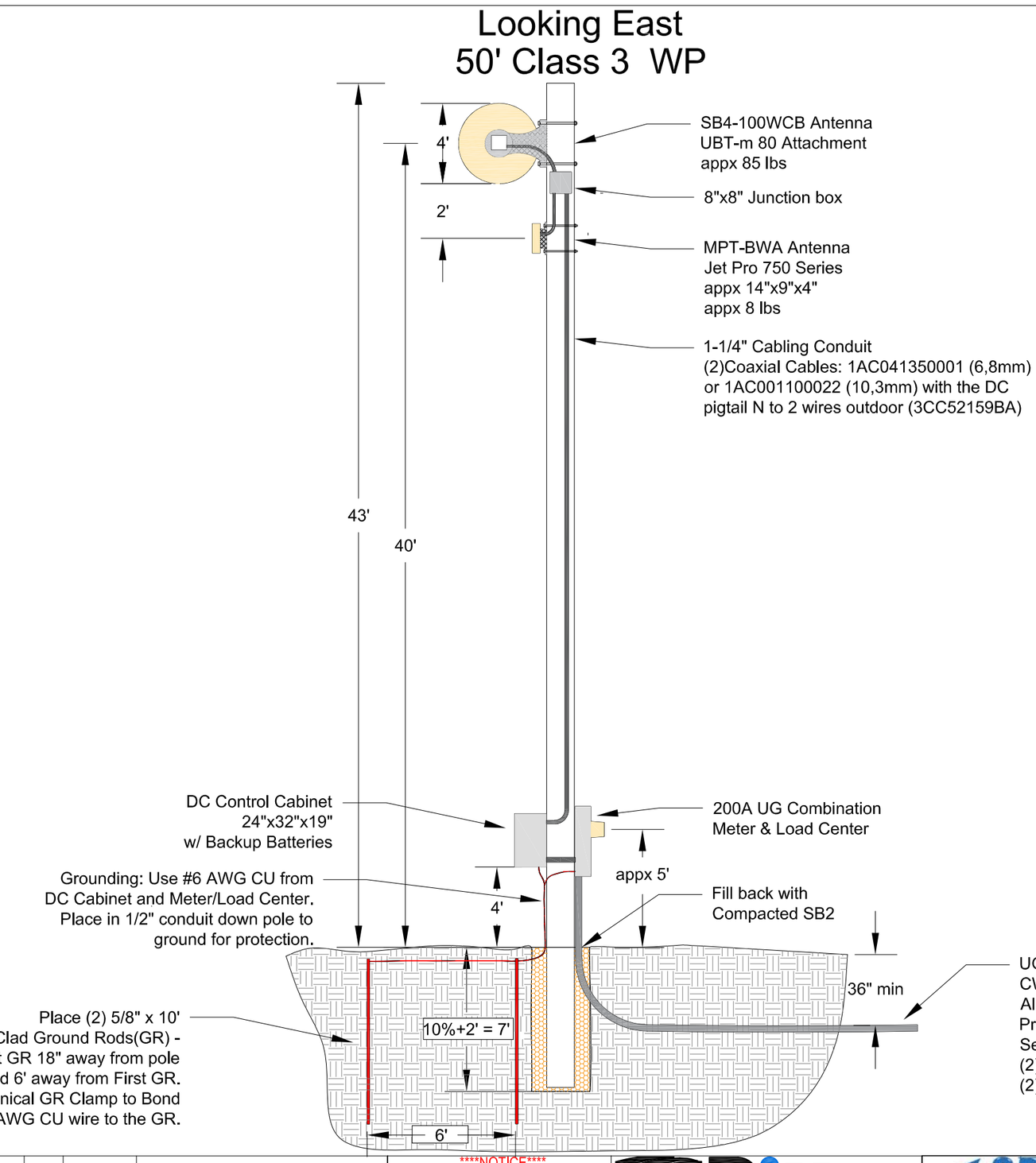
Jonesboro, Arkansas 72402
Phone 870-926-2855

WO NUMBER:
19.65.00340 - 2950 QUALITY WAY
JOB DESCRIPTION
WIRELESS BROADBAND POLE (50-3)

Pole Information	Class 3 - 50 foot Southern Yellow Pine
ANSI O5.1 Max Applied Load for Class 3 WP	3000 lbs.
Max Allowed Bending Moment GL	123,000 ft-lbs.
NESC Grade B Strength Factor(1) multiplier	3.8462
NESC Extreme Wind (T250-2b)	90mph (21psf)
NESC 252B-2B Shape Factor(2) multiplier	1.6
Calculated Applied Storm Load	420 lbs.
Calculated Applied Load with Factors(1)(2)	2585 lbs. (86% of Max Applied Load)
Calculated Max Bending Moment GL	105,969 ft-lbs.
All Loads are Under the ANSI Loading Criteria for Class 3 SYP WP	





STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11653
BRYAN A. TEEL
12-11-19

Arkansas 811
Know what's below. Call before you dig.

DESIGNED BY:	DAJ	WIRELESS BROADBAND POLE	#	DATE	DESCRIPTION
DRAWN BY:	DAJ	STRUCTURAL ANALYSIS	0	12/17/19	CONSTRUCTION
APPROVED BY:	BAT	GROUNDING DETAIL			
		ELECTRIC SCHMATIC			
		POLE DIAGRAM			

Ritter COMMUNICATIONS
30 ELM ST. Marked Tree, Arkansas 72365
Office: (870) 358-4400

356 SOLUTIONS
PO Box 2770
Jonesboro, Arkansas 72402
870-926-2855

WO NUMBER:
19.65.00340 - 2950 QUALITY WAY
JOB DESCRIPTION
WIRELESS POLE -JONESBORO

RADIO FREQUENCY SYSTEMS
The Clear Choice®

CompactLine Antenna, Ultra High Performance, Single Polarized, 4 ft

RFS CompactLine® and CompactLine® Easy Antennas are designed for short-haul microwave systems in all common frequency ranges from 6 GHz to 86 GHz. They are typically deployed in dense urban areas, metropolitan and suburban locations, aggregation points. They are especially optimized to integrated radios to reduce costs, installation complexity and time.


Antenna

FEATURES / BENEFITS

- Sizes ranging from 0.3 m (1 ft) to 1.8 m (6 ft)
- Frequencies ranging from 5.925 GHz to 86 GHz with support for four wideband frequency ranges (5.925-7.125, 7.125-8.5 ,10.0-11.7, and 71.0-86.0 GHz) to reduce antenna requirements and simplify logistics
- Single (SB and SC) and dual-polarized (SBX and SCX) models with the ability to upgrade from single to dual polarization and change frequencies in the field
- Low-profile design to reduce transportation requirements, wind load and antenna weight
- Simplified mounting design to accelerate installation
- CompactLine EASY models are extra light and easy to transport, deploy and upgrade
- Hardcover radomes
- Tested and validated ultra-high (ETSI EN 302 217-4-2 Class 3, FCC Class A) electrical performance
- Support for winds up to 250 km/h (155 mph) and even 320 km/h (195 mph) for SB1/SBX1
- An optional sway bar for antennas 1 m (3 ft) and larger is available

Technical Features

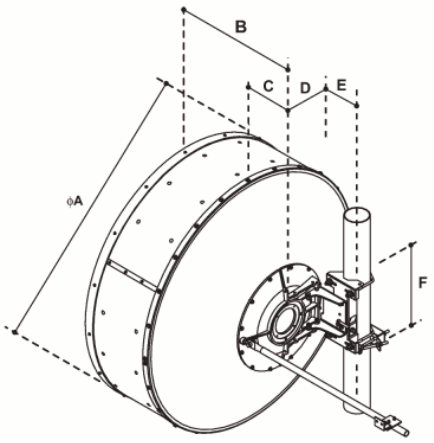
GENERAL SPECIFICATIONS		
Product Type		Point to point antennas
Profile		CompactLine
Performance		Ultra High
Polarization		Single
Antenna Input		PBR 100
Reflector		1-part
Radome		rigid
Antenna color		White RAL 9010
Swaybar		1: (1.35 m x Ø27 mm)
ELECTRICAL SPECIFICATIONS		
Frequency	GHz	10 - 11.7
3dB beamwidth	degrees	1.5
Low Band Gain	dBi	39.4
Mid Band Gain	dBi	39.9
High Band Gain	dBi	40.3
F/B Ratio	dB	66.0
XPD	dB	30.0
Max VSWR / R L	VSWR / dB	1.3 (17.7)
Regulatory Compliance		ETSI EN 302217 Range 1 Class 3 FCC Category A
MECHANICAL SPECIFICATIONS		
Diameter	ft (m)	4 (1.2)
Elevation Adjustment	degrees	± 15
Azimuth Adjustment	degrees	± 5
Polarization Adjustment	degrees	± 5
Mounting Pipe Diameter minimum	mm (in)	114 (4.5)
Mounting Pipe Diameter maximum	mm (in)	114 (4.5)
Approximate Weight	kg (lb)	35 (77)
Survival Windspeed	km/h (mph)	200 (125)
Operational Windspeed	km/h (mph)	200 (125)
FURTHER ACCESSORIES		
optional Swaybar		1: SMA-SK-4 (1.35 m x Ø33 mm)
Further Accessories		SMA-SKO-UNIVERSAL : Universal sway bar fixation kit

RADIO FREQUENCY SYSTEMS
The Clear Choice®

CompactLine Antenna, Ultra High Performance, Single Polarized, 4 ft

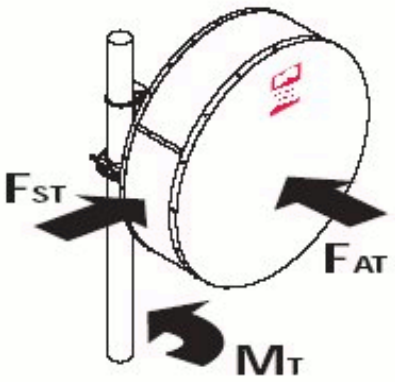
Mount Outline

Dimension A	mm (in)	1262 (49.7)
Dimension B	mm (in)	631 (24.9)
Dimension C	mm (in)	248 (9.8)
Dimension D for 114mm (4.5in) Pipe	mm (in)	365 (14.4)
Dimension E	mm (in)	115 (4.5)
Dimension F	mm (in)	365 (14.4)



Wind Load

FST Side force max. @ survival wind speed	N (lb)	1360 (306)
FAT Axial force max. @ survival wind speed	N (lb)	3290 (740)
MT Torque maximum @ survival wind speed	Nm (lb ft)	1055 (784)



External Document Links

Reflector Installation

Feed Installation

RPE (IQ-Link format)

RPE (PDF format)

RPE (Pathloss format)

RPE (IQ-Link format)

RPE (Pathloss format) 10.7-11.7 GHz

RPE (PDF format) 10.7-11.7 GHz

Notes

Nokia Wavence

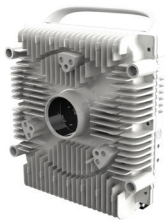
Ultra-Broadband Transceiver Millimeterwave 80 | Release 19 (ETSI/ANSI)

The Nokia Wavence Ultra-Broadband Transceivers (UBT) provide high-capacity, low latency microwave transport for shorthaul and small cells backhaul applications. The UBT-m 80 is a compact radio unit operating in the E-Band. Using the most advanced radio technologies and multi-frequency carrier aggregation, the UBTs support backhaul and Ethernet fronthaul evolutions with multi-gigabit capacities and low latency transport with best in class system gain.

The UBT-m 80 is integrated in the Nokia Network Services Platform for common management and fully compatible with the Nokia Microwave Service Switches (MSS) and the rest of the Nokia microwave portfolio.

	UBT-m 80
Application	• Macro cell backhaul (access and hub) • Split-mount or standalone configuration • Small cell backhaul
Physical	240mm x 220mm x 80 mm (9.4 in. x 8.7 in. x 3.1 in.)
Interfaces	• 1 x DC port • Three GE ports: (1 x 100/1000 Base T RJ45 PFoE and 2 x 1/2.5/10 Gbit Optical SFP) • 1 x XPIC port • 100x1000 Base T RJ45 used as default management port or as user port
Radio	• 71-76/81-86 GHz (FDD) • 10 Gb/s standard • 10 Gb/s in XPIC • Channels: 62.5 MHz to 2GHz
Modulation	• BPSK to 512QAM • Support for Adaptive Baud Rate
Weight	• 3.8kg
Power	• -48 V (-30V to -57V) • PFoE • 50 W

UBT-m 80 with embedded antenna



UBT-m 80 standalone

Technical specifications

UBT-m 80

Indoor/outdoor connections

- Maximum electrical cable length 100 m (328 ft) with Cat5e cable
- Longer distance with optical fiber (depends on fiber type)

Radio

- 1+0, 2+0, 1+1 HSB
- Carrier aggregation
- XPIC support
- Typical Tx power: 16 dBm
- Support for adaptive coding and modulation (ACM)
- Latency one way down to 10 usec
- Duplex technology: FDD
- Timing transport: IEEE 1588v2-PTP, SyncE
- ITU-T G.8264 support

Networking

- Ethernet interface: One electrical 100/1000Base-T, two (1G/2.5G/10G) optical SFP+ plug-ins
- Advanced QoS: Support for IEEE 802.1p, Diffserv, TTL and strict priority
- Dynamic scheduling according to air interface changes
- VLAN: IEEE 802.1P, IEEE 802.1Q, Q-in-Q support
- ERPS: ITU-T G.8032
- Ethernet OAM (IEEE 802.1ag, ITU-T Y.1731, IEEE 802.3ah)
- L3 VPN support
- SDN support
- Netconf/Yang support

Environmental

- Operating temperature: -40°C up to +55°C (-40°F up to +131°F)
- ETSI Class 4.1 (EN 300019-1-4), ANSI GR 3108 Class 4, GR-950, GR-63
- IP 67

Standards compliance

Regulatory

- Radio Equipment Directive 2014/53/EU - RED
- EN 302 217, FCC Part101, ISED Canada

Safety

- EN 60950-1, EN 60825-1, 60825-2, GR-1089, GR-3108

EMC

- EN 301 489-1, EN 301 489-4, GR-1089, IEEE1613

Metro Ethernet Forum

- MEF 2.0, MEF 8, MEF 9, MEF 14, MEF 22

Services

- Architecture and design
- Network planning
- Equipment and site engineering
- Installation services
- Integration services
- Performance analysis, network assessment, DCN, synchronization and QoS assessment
- Maintenance 24x7 technical support
- Return for repair or advanced exchange

Management:

- Secure FTP for software download and backup
- IPv4/IPv6 management
- Embedded web browser for network element configuration and monitoring
- Intuitive supervision systems
- SNMP agent with TCP/IP rerouting capability
- Nokia NSP Network Services platform

About Nokia

We create the technology to connect the world. Powered by the research and innovation of Nokia Bell Labs, we serve communications service providers, governments, large enterprises and consumers, with the industry's most complete, end-to-end portfolio of products, services and licensing.

From the enabling infrastructure for 5G and the Internet of Things, to emerging applications in digital health, we are shaping the future of technology to transform the human experience. networks.nokia.com

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Document code: SR1805025960EN (May) CID 205296

RADWIN HPMP JET-PRO 750 Series

Sector Base Station - Data Sheet (RW5000/HBS-Pro/5BG5/F58/FCC/JET/INT)

RW-5BG5-0650

Product Description

RW-5BG5-0650 is a sector Base Station radio unit (HBS) that provides up to 750 Mbps net aggregate throughput while delivering access connectivity for up to 64 Subscriber Units (HSU).
RW-5BG5-0650 supports 4.9 to 5.8 GHz and complies with FCC & FCC/IC regulations.
The radio comes with a smart beamforming integrated antenna with embedded GPS.

Product Highlights

- Base station with smart beamforming antenna
- Up to 750 Mbps net aggregated throughput
- Long range - Up to 40 km / 25 miles
- Supports up to 64 HSUs
- Guaranteed Service Level Agreement (SLA) per HSU
- Exceptional short and constant latency
- Single radio supporting multiple bands
- Advanced MIMO, OFDM and Diversity technologies
- Robust and reliable operation in harsh conditions, extreme temperatures and non-line-of-sight scenarios
- Ease of operation and maintenance

RADWIN

Product Specifications:

Configuration					
Architecture	Outdoor Unit with a smart beamforming integrated antenna with embedded GPS				
PoE to ODU Interface	Outdoor CAT-5e; Maximum cable length: 100m for 10/100BaseT and 75m for 1000BaseT				
Radio					
Max Capacity	750 Mbps net aggregate throughput				
Subscriber Units (HSUs) support	Up to 64 HSUs				
Range	Up to 40 km / 25 miles				
Channel Bandwidth	Configurable: 10, 20, 40, 80 MHz (for the default band)				
Modulation	MIMO-OFDM (BPSK/QPSK/16QAM/64QAM/256QAM)				
Adaptive Modulation & Coding	Supported				
Smart Bandwidth Management (DBA)	Supported				
DFS	Supported (FCC)				
Diversity	Supported				
Max Tx Power	25 dBm; max EIRP 36 dBm (for the default band)				
Duplex Technology	TDD				
Error Correction	FEC k = 1/2, 2/3, 3/4, 5/6				
Encryption	AES 128; FIPS 197				
Support Indoor units	RADWIN PoE devices (NS-9921-101X)				
Uplink / Downlink Allocation	Configurable: Symmetric or Asymmetric				
End to End Latency	Typical: 3.5msec @ 2 HSUs; 20msec @ 64 HSUs				
Layer 2	Bridging learning of 5K MAC addresses				
QoS	Packet classification to 4 priority queues according to 802.1P or Diffserv				
VLAN Support	802.1Q, QinQ, 4094 VLANs				
TDD Intra Site Synchronization	Supported				
TDD Inter Site Synchronization	Supported through common GPS receiver per site				
ODU Management	IPv4/IPv6 dual-stack; SNMP v1 and v3; HTTP using web browser				
Supported Bands					
Band	**CBW 10MHz [GHz]**	**CBW 20MHz [GHz]**	**CBW 40MHz [GHz]**	**CBW 80MHz [GHz]**	**Radio Compliance**
5.4 GHz FCC	-	5.480-5.715	5.480-5.715	5.485-5.715	FCC 47CFR Part 15.407
5.2 GHz FCC	-	5.255-5.340	5.255-5.345	5.250-5.345	FCC 47CFR Part 15.407
5.8 GHz FCC/IC (default)	5.730-5.845	5.730-5.845	5.730-5.845	5.730-5.845	FCC 47CFR Part 15.407; ISED RSS-247
5.1 GHz FCC	5.170-5.250	5.170-5.250	5.170-5.250	5.170-5.250	FCC 47CFR Part 15.407
4.9 GHz FCC/IC	4.940-4.990	4.940-4.990	-	-	FCC 47CFR Part 90 Subpart Y; IC RSS-111
5.1 GHz FCC	5.170-5.845	5.170-5.845	5.170-5.845	5.170-5.845	FCC 47CFR Part 15.407
Mechanical					
ODU Dimensions	35.6(w) x 22.5(h) x 9.4(d) cm				
ODU Weight	3.3 kg / 7.28 lbs				
Power					
Power Feeding	Power provided over ODU-IDU cable				
Power Consumption	<30W				
Environmental					
Operating Temperatures	-35°C to 60°C / -31°F to 140°F				
Humidity	100% condensing, IP67 (totally protected against dust and against immersion in water up to 1m)				
Safety					
US/CAN (cTUVus)	UL 60950-1, UL 60950-22, CAN/CSA C22.2 60950-1, CAN/CSA C22.2 60950-22				
CE/IEC	EN/IEC 60950-1, EN/IEC 60950-22				
EMC					
FCC	47 CFR, Part15, Subpart B, Class B				
ETSI	EN 300 386, EN 301 489-1, EN 301 489-4				
CAN/CSA-CEI/IEC	CISPR 22-2010 Class B				

RADWIN

Integrated Antenna	
Gain	20 dBi
VSWR	2.0 : 1
3 dB Azimuth Beamwidth	90 Deg. (typ)
Polarization	Dual Linear (Vertical and Horizontal)
Sidelobes Level	-12 dB(typ)
Cross Polarization	-30dB (typ)
F/B Ratio	-25 dB
Port To Port Isolation	35 dB (typ)
Lightning Protection	DC Grounded

Ordering Info

Part Number: RW-5BG5-0650

Description: RADWIN JET-PRO 750 ODU, with a smart beamforming integrated antenna with embedded GPS, supporting multi frequency bands at 5.x GHz, factory default 5.8 GHz FCC/IC.

Datasheet information can be changed by manufacturer without prior notice

Corporate Headquarters, T. +972.3.766.2900, E. sales@radwin.com, www.radwin.com

DS RW-5BG5-0650/10.18