



AVENUE SITE

INTEGRATED SMALL CELL PLATFORM

THE AVENUE SITE IS A ZONING-FRIENDLY SMALL CELL PLATFORM THAT ENABLES WIRELESS OPERATORS TO RAPIDLY EXPAND THEIR MOBILE PRESENCE, IMPROVE IN-BUILDING COVERAGE AND INCREASE NETWORK CAPACITY.

This all-outdoor small cell platform integrates high capacity packet microwave backhaul, Ethernet switching, power supply, battery backup and optional 3G/4G small cell base station. All of these elements are housed within a single environmentally hardened enclosure that is optimized for street-level deployment in urban environments.

Engineered to provide the greatest flexibility for mobile operators, the Avenue Site can be deployed to various structures including street lamps, traffic light poles, or building sides. The physical dimensions and appearance of the Avenue Site is designed to meet size, weight and aesthetic requirements set by city zoning officials, allowing the units to blend into urban environments. Unlike traditional macro-cellular deployments, the Avenue Site can be installed rapidly without costly civil engineering and site preparation.

With integrated switching and up to 3 independently alignable microwave backhaul beams, a single Avenue Site unit supports ring, hub, linear and daisy-chain architectures. Aggregate backhaul capacity is an unmatched 1.2 Gbps, with significantly higher throughput achievable with DragonWave's Bandwidth Accelerator.

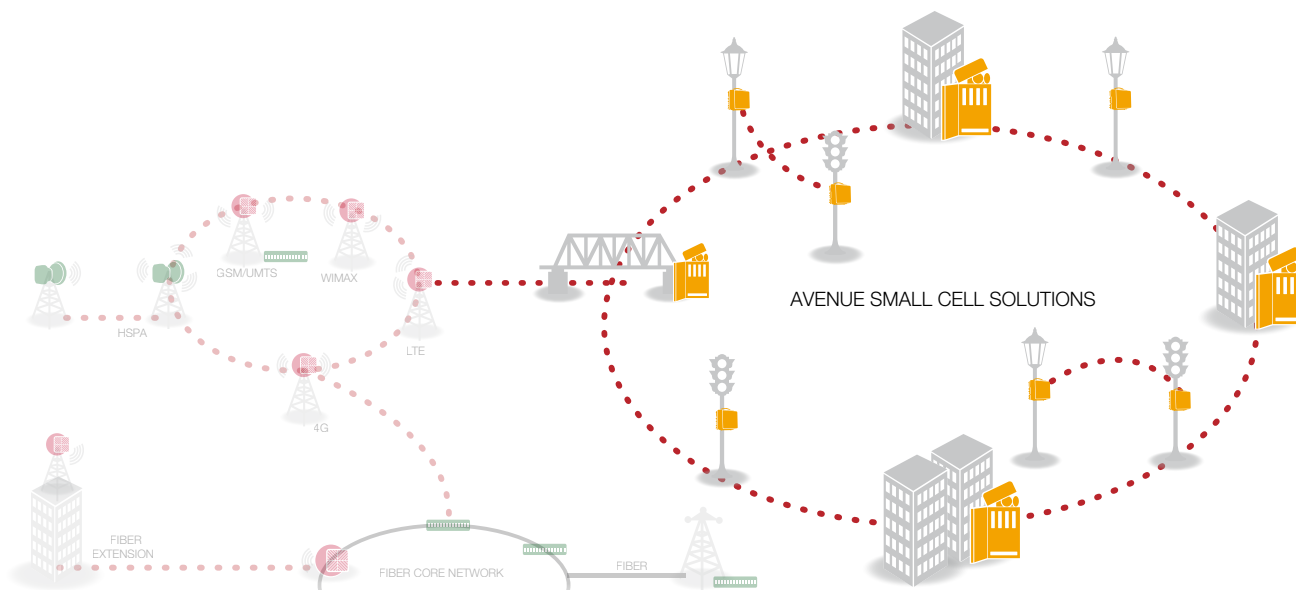
Completely interoperable with other DragonWave systems, the Avenue Site operates in 24, 26, 28, 31, 38 and 60 GHz bands.

SOLUTION HIGHLIGHTS

- Integrated small cell platform including:
 - High capacity backhaul with up to 3 independently aligned packet microwave radios
 - Integrated backhaul antenna array with up to 3 simultaneous backhaul beam paths
 - Battery backup
 - Power supply
 - Ethernet switching
 - Zoning-friendly, environmentally hardened enclosure
 - Slot for 3G/4G small cell base station, utilizing external RAN antennas
- Unparalleled backhaul performance and flexibility:
 - Pay-as-you-grow bandwidth scalability
 - 1.2 Gbps aggregate backhaul capacity plus Bandwidth Accelerator for 25-150% bandwidth increase
 - Service-aware Hitless Automatic Adaptive Modulation
 - Advanced QoS with 8 levels of prioritization
 - SyncE support and optimized transport of 1588v2
 - Integrated 256-bit AES encryption
 - 1+1 (hot standby), 2:0, Ring, and Mesh protection options
 - Comprehensive management and provisioning with DragonView NMS

KEY APPLICATIONS

- Small Cell Networks
- Public Safety Networks
- Private and Enterprise networks



BACKHAUL FREQUENCIES

24 GHz DEMS	FCC/IC
26 GHz	ETSI
28 GHz	FCC/ETSI
31 GHz	FCC/ETSI
38 GHz	FCC/ETSI/AUS/NZ/MX
60 GHz	UNLICENSED

BACKHAUL FEATURES

Backhaul	Up to 3 backhaul beam paths
Antennas	Integrated backhaul antenna array
Base Capacity	1.2 Gbps (400 Mbps per radio) full duplex CIR
Capacity w/Accelerator	Up to 3 Gbps (1000 Mbps per radio) full duplex
Latency GigE	120µs @ 256QAM. 50 MHz
Packet Size	64 to 9600 Bytes
Flow Control	Yes
Prioritization	8 levels served by 8 hardware queues, based on 802.1p/q, MPLS, DSCP ToS Bits
Modulation Shifting	Yes, Hitless
Loopback	Yes, Radio loopback
Synchronization	SyncE support, optimized transport of 1588v2
Encryption	Integrated 256-bit AES encryption
Networking options	Ring, ring-spur, hub-spoke, linear, daisy-chain

SWITCHING FREQUENCIES

Ethernet Switching	Integrated multipoint, multi-gigabit, non-blocking
Access Interface	4 x RJ-45 10/100/1000TX 5 x Gigabit Combo (RJ-45/SFP)
Fast Ethernet Ring Switching	Yes

POWER

Input	120 or 240 VAC, IEC 60320 C14 connector
Battery backup	1 to 4 hrs (variable based on number of backhaul links and inclusion of optional RAN unit)

MECHANICAL

Fully-integrated Single Enclosure	
With RAN unit	28 cm x 40.6 cm x 122 cm; 50 kg* 11" x 16" x 48"; 110 lbs*
Without RAN unit	28 cm x 40.6 cm x 66 cm; 32 kg* 11" x 16" x 26"; 71 lbs*
	*Based on single backhaul link. Add 7 lbs (3.2kg) per additional link.
Wind Loading	112 kph (70 mph) Operational 200 kph (125 mph) Survival
Backhaul Beam Adjustment	+/- 360° Azimuth; +60°/-5° Elevation
Antenna Mount Adjustment	+/- 45° Azimuth; +/- 22° Elevation

OPTIONAL RADIO ACCESS NETWORK SLOT

Max power	230 Watts, 48 Volts
Max weight	50 lbs; 22.7 kg
Max dimensions	33 cm x 18 cm x 48 cm 13" x 7" x 19" (w,d,h)
External RAN antenna support	Yes
Integrated GPS feed	Yes, optional

NETWORK MANAGEMENT (NMS)

Alarm Management	SNMP Traps, Enterprise MIB
NMS Compatibility	DragonView NMS; any SNMP based network manager; SNMP v1, v2c and v3
Ethernet OAM Support	802.3ah, 802.1ag, Y.1731
Security	3 Level Authentication
EMS	Web-Based, system, SSL HTTP, SSH, Radius, Telnet
Remote Monitoring	Backhaul, switching, power supply, battery backup, thermal, site security

ENVIRONMENTAL

Operating Temperature	-40°C to +60°C (-40°F to +140° F)
Humidity	100 % Condensing
Altitude	4500 m (14,760 ft)
Water Tightness	NEMA 3R
Operational Shock	ETSI 300-019-1-4; 5g 11ms
Operational Vibration	ETSI 300-019-1-4 Class 4m5, NEBS GR-63
Earthquake	NEBS GR-63