



ELLIPSE

UHF/TVWS Wireless Base Station for Premium Wireless Access

The Ellipse base station manages all security, traffic scheduling and Quality of Service (QoS) functions for up to 120 Ellipse outdoor wireless subscribers. This highly configurable wireless system features powerful processing capabilities to reliably transport any mix of wireless traffic between the base station and multiple remote sites.

In TV Whitespaces (TVWS) regulated regions, the Ellipse 'cognitive radio' efficiently employs dynamic resource allocation technology to access shared spectrum (channels). Based on regional regulations, up to 10 additional non TVWS channels may be available to deliver higher throughputs or avoid local interference. The system's ability to provide excellent coverage through dense foliage and over water enables reliable economic access to areas where it would be impractical using higher band systems.

Superior performance allows use of lower antenna heights that can significantly reduce deployment costs. Flexible mounting options and full over-the-air provisioning further lowers upfront costs to yield faster ROI.

ELLIPSE FEATURES

- Highly reliable transport hub supports many Ellipse subscribers
- Pre-installed speed key, access tokens and CA certificate
- Push all provisioning (SLAs) and upgrades over-the-air
- Comprehensive warranty, maintenance and optimization packages for lowest Total Cost of Ownership (TCO)
- Supported by industry's first CRM-integrated auto-provisioning system

REDLINE'S TECHNOLOGY ADVANTAGE

Redline's award winning Virtual Fiber™ system is advanced technology that delivers multipoint access or transport quickly and cost-efficiently. The unsurpassed fixed-wireless and nomadic-wireless solution has all your communication needs covered.



SYSTEM AT A GLANCE

High performance wireless base station

Connectorized for wide choice of UHF antennas

Supports Nominet PAWS DB service

Simple Layer 2 network integration

Field-proven in complex urban environments

Multiple user-defined service levels per terminal

High-grade cyber security features

Low power requirements

Optimized for HD video streaming

SPECIFICATIONS

OVER THE AIR

Capability	LOS/OLoS software-defined PMP base station ¹
Max Tx Power	+18 dBm per port ^{1,2} (Max. 21 dBm combined tx power, MIMO mode/frequency band specific)
Antenna Info	External MIMO sectoral or Omni directional
Channel Access	Scheduler with ARQ (Automatic Repeat Request)
Channel Efficiency	Up to 93%
Channel Size	3.5 / 6 / 12 / 18 / 24 MHz [software selectable] ¹
Modulation & Coding	BPSK to 256 QAM 7/8 ¹
RF Band	470-614 MHz ¹ , 470-698 MHz ¹ with notch at 602-620 MHz
Wireless QoS	Auto link distance ranging, auto channel scanning, optimal channel selection, ATPC
RF Features	Dynamic and multiple Fixed Frame profiles; Fast Fusion Link Adaptation; Frequency scanning; Spectrum Analyzer
Spectral Efficiency	9.3 bits per second per Hertz
Transmission	OFDM (orthogonal frequency-division multiplexing), TDD/TDMA 2 x 2 MIMO A/B with STBC & MRRC, high-rejection Tx/Rx filtering
Wireless Throughput	Up to 186.6 Mbps UBR ¹
Number of Remotes	120

NETWORK

Latency	<10 ms
Layer 2	160 Mbps max. aggregate ¹
Management Interface	Redline ClearView NMS, SNMP v2c/v3, HTTP/HTTPS (Web), Telnet/ SSH (CLI), Management VLAN tagging, RADIUS User Authentication, OTA software upgrades
Network Features	Transparent bridge, DHCP pass-through, 802.1Q VLAN (Q-in-Q), VLAN Whitelisting, Syslog, SNTP, spectrum analyzer
MAC	Per link: dynamic ARQ, dynamic adaptive modulation, dynamic and fixed frame, Fast Fusion Link Adaptation
Packet Processing	>280,000 Packets/second
Provisioning	MAC-Based; Template-based; Automatic using Redline ClearView NMS ¹
QoS	802.1p, 802.3x, CIR & PIR settings, up to 8 services per terminal
Security	Management Encryption: TLS v1.2, AES-256, SHA1 Device Authentication: MAC-based mutual authentication Data Encryption: AES-128/256
Location & Timing	Built-in GPS ¹

ENVIRONMENTAL

Enclosure	IP 67 (IEC 60259)
Humidity	100% humidity, condensing
Power Requirement	<17 W; standard IEEE 802.3at (PoE) over CAT5 cable 100 m (330 ft) max.
Surge Protection	Built-in: PoE and RF ports
Temperature	Operation: -40 to 75 °C (-40 to 167 °F) dynamic and thermal dissipation (no moving parts) Short-Term Storage: -50 to 85 °C (-58 to 185 °F)

COMPLIANCE

Bands:	470-698 MHz ¹ ; FCC 47 CFR Part 15 Subpart H, §15.709 (Nominet PAWS DB service)
EMC:	EN 301 489-1, EN 301 489-17
Safety:	IEC, EN, and UL/CSA 60950
Security	FIPS 197 compliant
Other:	RoHS compliant

SPECIFICATIONS (CONTINUED)

PATENTS

Website: Protected by U.S. Patents 8,711,920 | 8,750,365 | 8,711,921. Additional patents may be pending in the U.S. and elsewhere [rdlcom.com/patents].

All specifications are subject to change without notice.

1. Availability restricted by regional regulations, model type, software version and purchased product options key.
2. Channel 35 allowed 2 dBm lower Tx power.

470-614 MHZ / 470-698 MHZ WIRELESS BASE STATION - PACKAGING

ELLIPSE

Connections

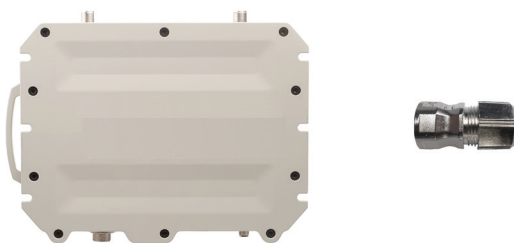
- 1x RJ-45 (10/100 Ethernet)
- 2x RF N(F) (RF antenna)
- 1x TNC(f) (GPS antenna)

Dimensions/Weight

306.8 x 230 x 60.3 mm (12.079 x 9.056 x 2.375 in)
2.7 kg (6.0 lbs) (without bracket or antenna)

In the Box

RDL-3000 XP Ellipse 470-614 MHz / 470-698 MHz,
Ethernet port gland (metal) and dust caps.



DRAWINGS

ELLIPSE 470-614 MHZ / 470-698 MHZ

