Technical Datasheet

Bigleaf Cloud Connect delivers next-generation internet optimization by connecting Bigleaf's Customer Premise Equipment (CPE) routers with Gateway Clusters at the internet core that make-up our proprietary Cloud Access Network, offering comprehensive visibility, control, and robust performance throughout the entire data path.

By unifying all network circuits (5G, LTE, LEO satellite, and wired) into a single intelligent network, reliable internet and cloud application performance is ensured across all locations —whether fixed, remote, or temporary.

This datasheet details the Bigleaf routers used with the Cloud Connect solution.

Meet the Bigleaf Routers

Your gateway to an internet without downtime:

- Plug and play install.
- Arrives pre-configured with your circuit details and tested for a seamless, zero-configuration installation experience.
- Installs outside of your firewall and works with any existing network infrastructure.
- Simple IP address swap on the existing firewall WAN interface completes the installation without breaching the existing LAN security perimeter.
- Connects up to four broadband circuits.
- Connects your sites to the Bigleaf backbone Cloud Access Network with Bigleaf-issued IP blocks.

Unrivaled Connectivity

Cloud Connect delivers resilient and redundant connections through intelligent network optimization enabled by our purpose-built routers. These devices leverage proprietary algorithms to continuously analyze traffic patterns and network conditions, automatically adapting in real-time to maintain optimal performance across all connections. Resiliency and redundancy are ensured through automatic network optimizations.

SAME-IP FAILOVER

Border Gateway Protocol (BGP)-like dedicated public IP address block(s) provided from the Bigleaf router LAN interface deliver seamless failover of inbound and outbound traffic.

- All application sessions are maintained through consistent IP addressing and fast failover.
- Physical redundancy across geographically diverse Bigleaf Gateway Cluster data centers maintain consistent IP addressing.

INTELLIGENT LOAD BALANCING

Bigleaf load balancing determines how network traffic is routed to WAN circuits. You can maintain out-of-the-box default settings for Bigleaf to automatically decide how to route traffic among your circuits based on best practices for businesses or make easy adjustments that allow traffic to access a circuit only in specific cases.

- Facilitated by asymmetric/unidirectional ISP circuit health monitoring.
- Automatic session-based load balancing for optimal circuit usage efficiency and application health, based on four application algorithms:
  - Real-time
  - Bulk Data
  - Interactive
  - High-Load Bulk Data (download only)
- Mid-session same-IP re-routing for all applications based on real-time path health and application need through attributes such as jitter, latency, and packet loss.
- Automatic traffic identification works without configuration for almost all customer use cases; custom configurations are available as needed.
- Advanced configuration options that enable granular selection of load balancing, backup only, or blocking, based on traffic class.

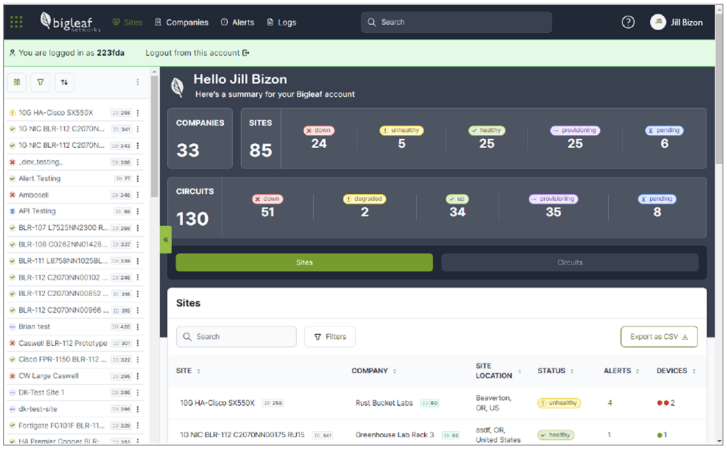
DYNAMIC QOS

Bigleaf's Dynamic Quality of Service (QoS) provides effective and automatic prioritization for traffic traversing the public internet.

- Application traffic is automatically identified and grouped into six classes:
  - VoIP
  - Urgent
  - Bulk Data
  - Real-time
  - Interactive
  - Other
- Algorithmic identification of ISP circuit clean capacity in real time for true internet wide QoS.
- Dedicated Gateway Cluster routing of all customer traffic for 100% control of prioritization, even with bursty download TCP or large UDP flows.
- Automatic traffic classification works without configuration for almost all customer use cases. Custom rules are available as needed.

CENTRALIZED VISIBILITY AND REPORTING

Cloud Connect Dashboard provides centralized visibility and alerting. Detailed data is provided on ISP circuit quality, bandwidth utilization, and more. Email alerts provide real time notification of up/down status and health issues.



Ideal for Wireless-First Environments

Bigleaf Cloud Connect is ideal for sites relying exclusively or primarily on wireless connections, from LTE to satellite. Our intelligent circuit aggregation and network optimization technology continuously monitors and adapts to changing conditions of all connection types, providing reliable wireless connectivity that supports mission-critical applications and ensures smooth operations for businesses of all types and locations.

The BLR Edge 800W router features an integrated 5G cellular modem that delivers connectivity via Bigleaf Wireless Connect data plans while working in concert with up to three additional wired or wireless connections, creating a unified multi-circuit solution that maximizes reliability and performance.

BIGLEAF WIRELESS CONNECT DATA PLANS

Flexible, business-grade cellular data plans designed specifically for Cloud Connect deployments.

- Pre-configured router is shipped with carrier-activated 5G plan.
- Simplified billing and management through a single provider experience.
- Predictable pricing with no data overage fees.

INTEGRATED CELLULAR CONNECTIVITY

Built-in 5G-capable modem on the Edge 800W router provides carrier flexibility and enables enhanced reliability.

- Seamless integration with Wireless Connect plans for turnkey deployment.
- 5G Ready design supports use of preferred carrier relationships and existing service plans.

BRANCH-WIDE WLAN

Comprehensive Wi-Fi coverage extends reliable connectivity throughout your wireless-first location.

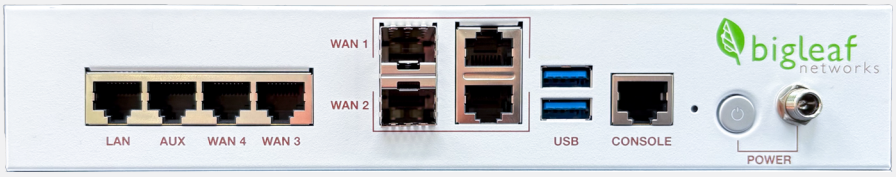
- Seamless connectivity to optimized cloud application performance across laptops, printers, and smart devices.
- Convenient, all-in-one device delivering network optimization, 5G and WLAN connectivity.

Bigleaf Router Hardware

BLR-108

Front

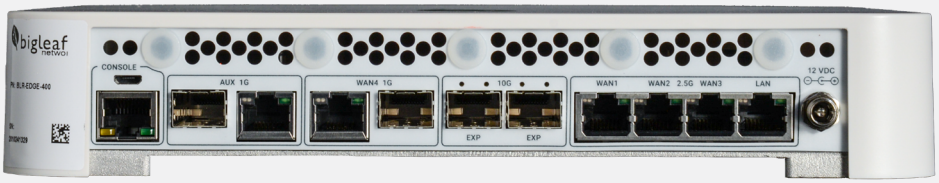
Back



BLR EDGE 400

Front

Back



BLR EDGE 800W

Front

Back

BLR-112

Front

Back

Bigleaf Router Specifications

	BLR-108	BLR EDGE 400	BLR EDGE 800W	BLR-112
GENERAL				
Max Throughput[1]	500 Mbps / 500 Mbps or 1 Gbps / 100 Mbps	500 Mbps / 500 Mbps or 1 Gbps / 100 Mbps	500 Mbps / 500 Mbps or 1 Gbps / 100 Mbps	3 Gbps / 3 Gbps
MTU[2]	1420 bytes	1420 bytes	1420 bytes	1420 bytes
ISP WAN Ports	2 x GbE combo SFP or RJ45, 2 x GbE RJ45	3 x 2.5 GbE RJ45, 1 x GbE combo SFP or RJ45	3 x 2.5 GbE RJ45	4 x GbE RJ45
LAN ports to Customer Firewall	2 x GbE RJ45	1 x 2.5 GbE, 1 x GbE combo SFP or RJ45	1 x 2.5 GbE, 1 x GbE combo SFP or RJ45	2 x GbE RJ45
Built-in Cellular WAN	No	No	5G NR / 4G LTE	No
Wi-Fi	No	No	Dual Band Dual Concurrent (2.4 GHz and 5 GHz) MU-MIMO. 802.11ax	No
Multi-use Fiber Ports	None	2 x combo 10 GbE SFP+ or 1 x GbE SFP	2 x combo 10 GbE SFP+ or 1 x GbE SFP, 1 x GbE combo SFP or RJ45	4 x 10 GbE SFP+ or 4 x GbE SFP[3]
CPU Platform	Intel® Atom®	Intel® Atom® C3758 CPU (4 core)	Intel® Atom® C3758 CPU (8 core)	Intel® Core
HARDWARE REDUNDANCY				
Next Business Day Hardware Replacement	Yes	Yes	Yes	Yes
Standard HA (2 x routers)	Upgrade Option	Upgrade Option	No	Upgrade Option
PHYSICAL				
Mounting Options	1U (each)	1U (rack and wall options)	1U (rack and wall options)	1U (each)
Dimensions (W x D x H)	9.1” x 6.8” x 1.65”	10.0” x 7.9” x 1.7”	10.0” x 7.9” x 1.7”	17” x 11.8” x 1.75”
Power Draw	40W	60W	60W	150W
Fanless	Yes	Yes	No	No
Operating Environment	0 - 104° F temperature, 10-90% humidity	0 - 104° F temperature	0 - 104° F temperature	0 - 104° F temperature, 10-90% humidity
Compliance	FCC, CE, UL	FCC, CE, UL, RoHS, IC	FCC, CE, UL, RoHS, IC	FCC, CE, UL
MTBF (Hours)	178,128 @ 40C	163,042 @ 40C	163,042 @ 40C	178,128 @ 40C

1. Typical internet usage patterns and packet sizes.
2. Bigleaf system will set TCP MSS appropriately and transparently fragment UDP, IPSEC, and other non-TCP packets, so no user equipment changes are generally needed. Stated size is for Bigleaf standard unencrypted tunnels.
3. Two expansion card options are available for the BLR-112: 1 Gb or 10 Gb.

Bigleaf Wireless Connect Hardware and Accessories

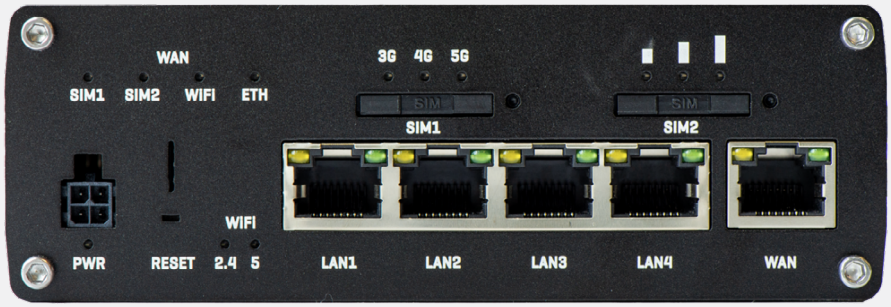
Bigleaf Wireless Connect can be supplied either through our BLR Edge 800W router, or through a separate Teltonika RUTM50 device that connects to your Bigleaf BLR 108, BLR Edge 400, or BLR 112 routers. Our wireless service supports both 5G and 4G LTE and offers an additional wireless circuit to ensure uninterrupted access and optimal performance of your cloud-based mission-critical tools and resources.

When the Teltonika device is being used, it is shipped from Bigleaf with following accessories:

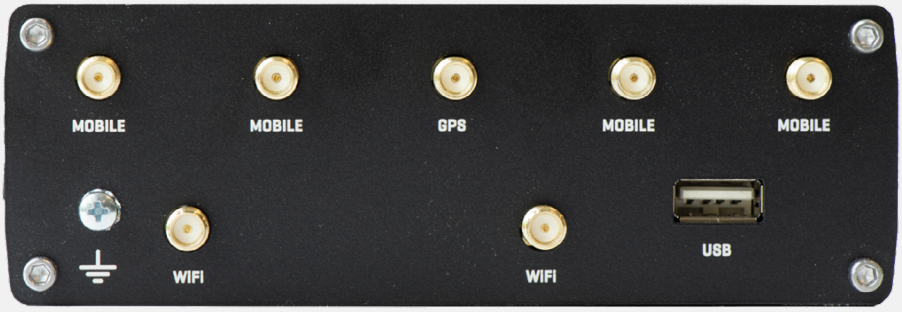
- Power cable and power supply
- 4 Mobile antennas
- Ethernet cable

The images below show the ports and connectors on the Teltonika device.

Front



Back



Teltonika RUTM50 Router Specifications

ITEM	DESCRIPTION
Mobile	5G Sub-6 GHz SA, NSA 2.4, 3.4 Gbps DL (4x4 MIMO) 900, 550 Mbps UL (2x2 MIMO); 4G (LTE): DL Cat 19 1.6 Gbps (4x4 MIMO), UL Cat 18 200 Mbps*
Antenna	4 x SMA for Mobile
SIM	2 SIM cards (AT&T | VZW | T-MOBILE)**
LAN	4 x ETH ports, 10/100/1000 Mbps
Power	4-pin industrial DC power socket Idle: <5 W, Max: <18 W
Dimensions (W x D x H)	5.2” x 1.7” x 3.7”

* Theoretical download limit per specifications.

** Only one SIM is provisioned and operational.

Remote 5G LTE Antenna Kit Specifications

Bigleaf offers a remote antenna kit compatible with the BLR Edge 800W and Teltonika RUTM50 routers to enhance 5G or LTE data throughput (speed) in challenging site installations. This kit has weatherproof, omnidirectional, multi-antenna housing with flexible mounting options.

When the 5G LTE network device is embedded in a building or enclosure with obstructions and no line of sight to the cellular basestation (tower), this kit allows the installer to move the antenna away from the network device to the most optimal location outside of those obstructions.

This 5G LTE antenna kit has IP65 weatherproof housing that contains multiple antennas with four low-loss coax cable connections so that only one antenna kit is needed for each site.

Hardware included in the kit allows for flexible indoor/outdoor mounting on wall, pole, or window locations. Multiple low-loss coax cable length options are offered to perfectly adapt antenna location to each site.

The antennas are omnidirectional and do not need to be “aimed” at the cellular basestation. However, some sites require colocation with other types of antennas; e.g. on a building roof. A steerable ball mount is included for optional tuning/ positioning of the antenna housing relative to other nearby antennas.

Bigleaf Antenna Kit Specifications

FEATURE	DESCRIPTION
Antenna Type	5G / LTE
Antenna per Housing	4x 5G/ LTE antennas (MIMO)
Directionality	Omnidirectional (steerable mount for optimization with other nearby antennas)
Mounting Options	Hardware included for: wall mount, pole mount, window mount
Coax Cable Length (antenna)	9 ft hard-wired to antenna housing (built-in)
Coax Cable Length (extension)	Kit options for extension cables in lengths: • 16 ft • 31 ft • 66 ft
Coax Cable Impedance	50 ohms
Power Input	None (passive)
Environmental	IP65 weatherproof indoor/outdoor -40 to +185° F operating temperature
Antenna Dimensions	6.5” x 6.5” x 5.9”
Antenna Weight	31.7 oz

Discuss your network needs with a Bigleaf expert.

LET’S TALK

bigleaf networks

Bigleaf enables internet connectivity without complexity, from network optimization to 5G wireless solutions, making it a must-have for IT pros and their organizations to conduct business on the internet with confidence. Seamlessly integrating with established firewalls, ISPs, and cloud applications, Bigleaf’s solutions are incredibly simple to install, begin working instantaneously, and continue to work unattended, preserving application performance and user productivity despite circuit degradation or outages.

www.bigleaf.net | 888.244.3133 | sales@bigleaf.net |