ROC410

Radioenlace WIFI s/b/g/n/ac (M/S) PoE 1200Mbps Dual Band 2×2 MIMO 5Km

Galgus ROC410 radiolink is the right choice to link outdoor wireless communications type of 802.11ac, up to 5Km distance. It is based on 2 units OC410, one working as Master and the other as slave. It can be used with more units OC410 for PTMP directional scenarios, or with OC400, as master, for omnidirectional scenarios.

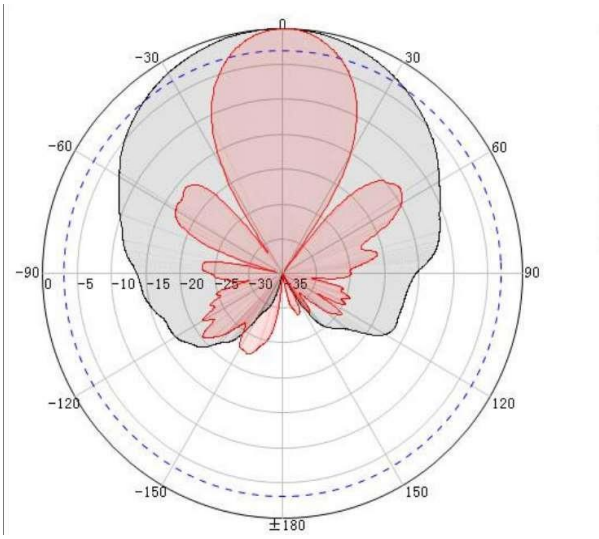
Thanks to its robust ABS waterproof, dustproof and sunscreen shell cage and its max gain 12/14dBi WIFI antenna and its 500mW RF power, makes this product to be the ideal one for radiolinks up to 5Km distance in PtP and PtMP multiscenarios with 60º Horizontal angle coverage. It is an excellent choice for linking outdoor medium-high density multi-scenarios to cover typical usage of HD movies, streaming, online gaming, wireless security, device location, positioning and other bandwidth-intensive tasks, up to 5Km WIFI range.

Main features

Antenna	Build in directional 60º 12/2.4GHz 14dBi/5GHz gains.Up to 500mW RF Tx power 2,4 /5GHz: 2x2 MIMO
Interfaces	10/100/1000 Mbps RJ45 WAN Port WAN port supports IEEE 802.3at standard PoE 10/100/1000 Mbps RJ45 LAN Port Reset button
WiFi Standard	802.11 a, b, g, n, ac
PHY Capacity	**2.4 GHz**: 300 Mbps **5 GHz**: 900 Mbps
QoS capabilities	Profile based packet priorities and planning. Bandwidth restriction for each SSID. VMM parameters modification Calling QoS classification and prioritization for wireless and wired interfaces Traffic congestion management: limitation of per user bandwidth
Power Supply	DC 12V 1.5A Jack Input IEEE 802.3at PoE+
Maximum Consumption	<20W
Humidity	Operating: 5% to 95% (non-condensing)
Operating Temperature	-30°C (-22°F) to 55°C (131°F)
Dimensions Weight	315 x 145 x 80 mm HxWxD 820 gr
Security	WIDS & WIPS CHT, ACL support, IEEE 802.11w RFC 6101 Secure Layer Socket, RFC 5246 Transport Layer Security, RFC 4253 Secure Shell Advanced Firewall with SYN-Flood protection MSS clamping, NAT, Port forwarding, Traffic Rules Support 64/128-bit WEP, 128bit WPA (TKIP/AES), WPA & WPA2 Personal and Enterprise with IEEE 802.1x and VLAN tagging, WPA3 PSK, Local authorization via RADIUS Server, IPsec and L2TP passthrough, Key Management, PSK/TKIP Encryption, AES Encryption, Denial of Service Attack Protection, MAC Filtering (Dynamic Blacklist), Isolate wireless clients, Hide SSID
WIFI features	IEEE 802.11h (DFS), WMM, Power Save, Tx Beamforming, LDPC, STBC, , IEEE 802.11r/k/v, IEEE 802.11u Hotspot and Hotspot 2.0. LLDP,ACL and aptive Portal supports, Online signup and policy provisioning, Tag VLAN based on SSID WISPr, Multiple SSIDs, Data aggregation, Packet priorities and planning, Statistics reporting, SW updates and configuration through DHCP auto-provisioning OFDM = BPSK,QPSK, 16-QAM, 64-QAM and DSSS = DBPSK, DQPSK, CCK modulations. SSID broadcasting, Multi SSID up to 8 (4 SSID in 2.4GHz, 4 SSID in 5GHz), >128 users
Management & Diagnostics	Galgus Cloud Manager, Web GUI, RFC 1157 & 2271 – SNMP, RFC 3414 – SNMP v3 HTTP/HTTPS Web Server, Zero Touch Provisioning, Telnet SSH, Network Controller Enhancer. Ping, Traceroute and Ns lookup tools. Syslog and Local Log support, Save and restore settings via Web Interface. Wireless RF status and throughput, TCP/UDP Connections statistics and details. Traffic metrics per interface, Load . Can manage the AP through VLAN ID, Map VLAN IDs to multiple SSID, IEEE 802.1q, Dynamic VLAN with 802.1x, Up to 16 VLAN
IP & Network	IPv4, IPv6, IEEE 802.1d & 802.1s– STP, IEEE 802.1q – VLANs, RFC 2131 & RFC 2132 – DHCP Client/Server, RFC 1661 PPP, RFC 2516 PPPoE, RFC 2637 PPPtP, RFC 2661 L2TP, Static Leases, Domain whitelist, Firewall, IP filter, URL filter and MAC filter, Can work as: Gateway (PPPOE, static IP, dynamic IP) , Wireless AP, Repeater, WISP, WDS, Ad-Hoc and Pseudo Ad-Hoc, Mesh 802.11s, Monitor, Bridge. DDNS, VPN pass through, Port forwarding and DMZ host. UDP, TCP, DNS, NTP, STP,
IPv6	RFC 6333 Dual Stack, RFC 4213 IPv6-in-IPv6, RFC 4291/3315: Dynamic Host. DHCPv6
Case & Mounting	ABS cage. Pole mounted. IP67. Waterproof connectors.

RF Radiation diagrams

Vertical RF radiation diagram 2.4GHz

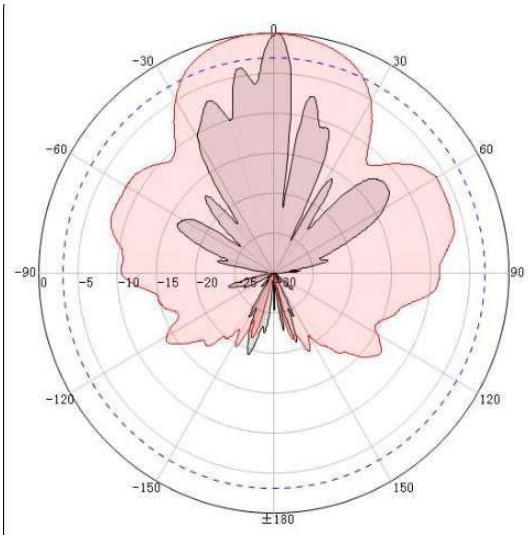


3dB width: 71.79°
Before and after ratio:27.65dB

Peak level: -35.85dB
3dB width: 28.95°
Before and after ratio: 22.39dB

Gain: 10.97dBi

Vertical RF radiation diagram 5.8GHz



Peak level: -45.64dB
3dB width: 6.90°
Before an after:19.39dB

Peak level: -46.01dB
3dB width: 50.67°
Before and after ratio： 19.23dB
Comparison gain: 12.77dB

Gain: 13.32dBi

RF Performance Table

RF Power	2.4G: 11n @MCS7:23±2DB, @MCS0:25±2DB. 11g @54M:24±2DB, @6M:26±2DB. 11b @11M:26±2DB, @1M:28±2DB. 5.8G: 11a @54M:24±2DB, @6M:26±2DB. 11n @MCS7:22±2DB, @MCS0:24±2DB. 11ac @MCS9:21±2DB, @MCS0:23±2DB.
Receive Sensitivity	2.4G: 11n: -70dbm@MCS7, -88dbm@MCS0. 11g: -72dbm@54Mbps, -88dbm@6Mbps. 11b: -85dbm@11Mbps, -94dbm@1Mbps. 5.8G: 11a: -72dbm@54Mbps, -90dbm@6Mbps. 11n: -70dbm@MCS7, -90dbm@MCS0. 11ac:-60dbm@MCS9, -86dbm@MCS0.
EVM	11n: ≤-28 DB 11g: ≤-25 DB 11b: ≤-10 DB 11a: ≤-25 DB
PPM	±20ppm

COMMON FEATURES CHT

Its patented and **embedded Cognitive Hotspot Technology** (**CHT**) ensures users of your WiFi network will enjoy supreme performance even in the most adverse conditions. Thanks to its **automatic resource optimization and control** based on artificial intelligence, Galgus´ APs appropriately suit many different scenarios. In addition, the site administrator will find it easier to operate the network, with a **powerful and intuitive optional cloud management system**: You can handle your network from a single location and extract more valuable information from your infrastructure.

A network with Galgus´ APs:

- **Avoids typical problems** from those solutions with centralized controllers or cloud controllers such as lack of adaptability and robustness, single points of potential failure, delays in decision making, bottlenecks, traffic efficiency drop...
- Drastically **reduces operating costs and increase performance**, as CHT is responsible for optimizing the network in real-time automatically without human intervention: allocation of radio resources, channels, bandwidth, load balancing and prebalancing, airtime fairness, smart and predictive roaming, traffic congestion management, automatic power control, multicast, multicast to unicast conversion, device location and tracking, etc.
- **Adds an enormous value** to the existing infrastructure (location and tracking of connected users even if they falsify their MAC address, detecting, mitigating and even locating hacker attacks, generating heat maps in real-time, as well as discovering and exploiting the amendments that support the devices), allowing the owner of the network to use the data obtained without violating the user´ privacy.
- **Simplifies** administrators´ life, thanks to its Zero-Touch Provisioning philosophy for immediate deployment and advanced enterprise-grade management features (cloud management, REST API, captive portal and integration with social login, dynamic VLANs, WPA enterprise with Radius support, and modular licenses with auto-download system).