

# CASE STUDY: wireless digital signage

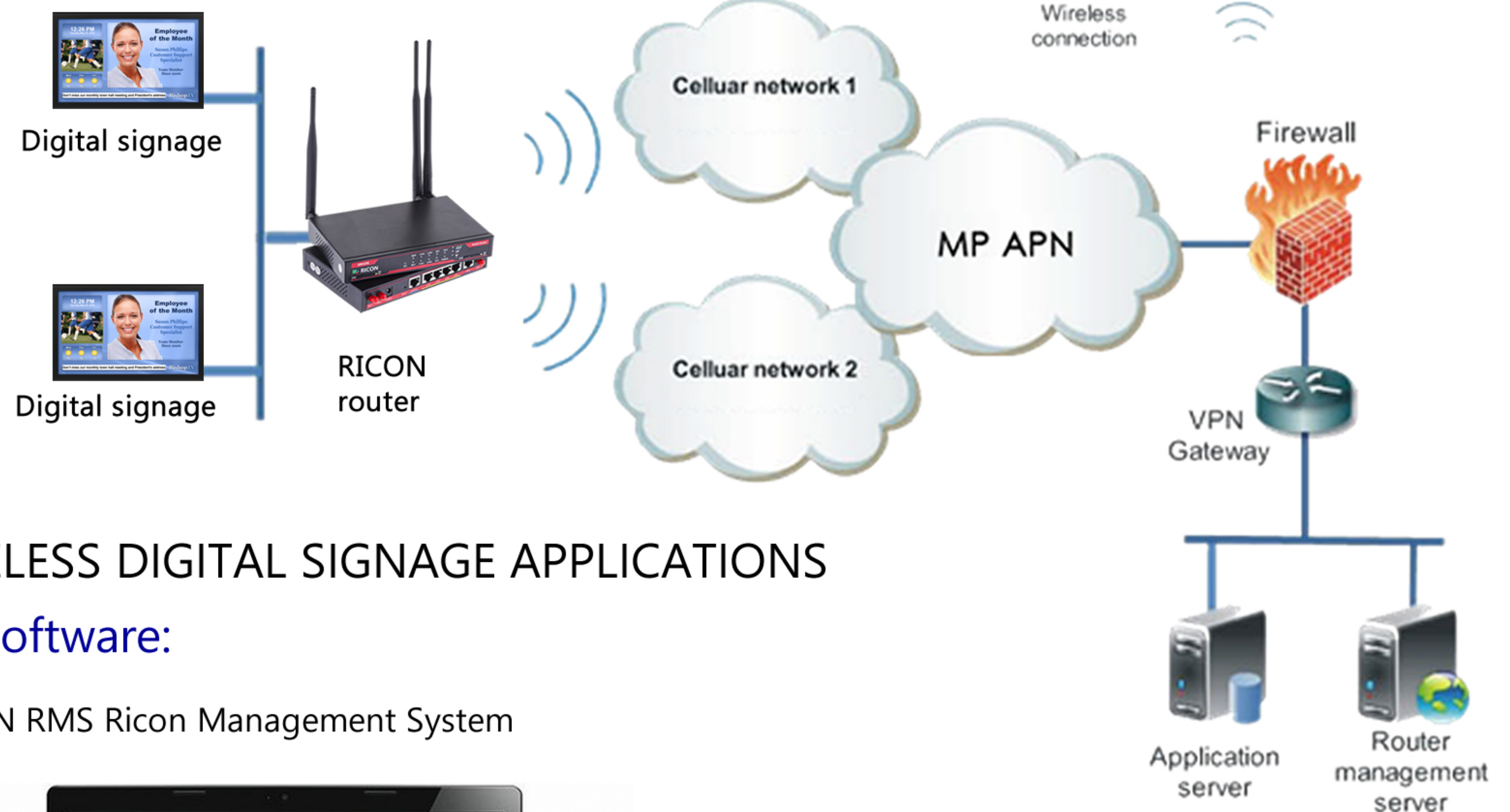


## RICON Mobile provides hardware (3G/4G routers) and software (RMS Ricon Management System ) for wireless digital signage applications.

Digital signage becomes more and more popular nowadays for its obvious benefits. RICON provides a 3G/4G cellular wireless approaching for digital signage owners so that technical guys need to go to the field frequently to do maintenance and updates contents of those signage board. This solution uses latest cellular technologies. RICON connects screen player with contents server in Internet via wireless network. Administrator can update up-to-date contents of every screen remotely over 3G/4G cellular network in office, and can monitor status of each screen as well. This wireless connection is secure, stable, and reliable. And a lot of maintenance fee can be saved for owners who have many spotty digital signage sites. Now, digital signage owners can put the digital signage to anywhere as long as the cellular signal is available. And because the connection is wireless, no network construction work is needed.

RICON wireless networking solution combines all most advanced requirements and provides secure, reliable, flexible and cost effective networking solutions. RMS Ricon Management System, working together with RICON routers as a part of the RICON solution, monitors connectivity on the wireless cellular network, informs about network availability, signal strengths also controlling devices remotely.

### HOW IT WORKS



### RICON SOLUTION FOR WIRELESS DIGITAL SIGNAGE APPLICATIONS

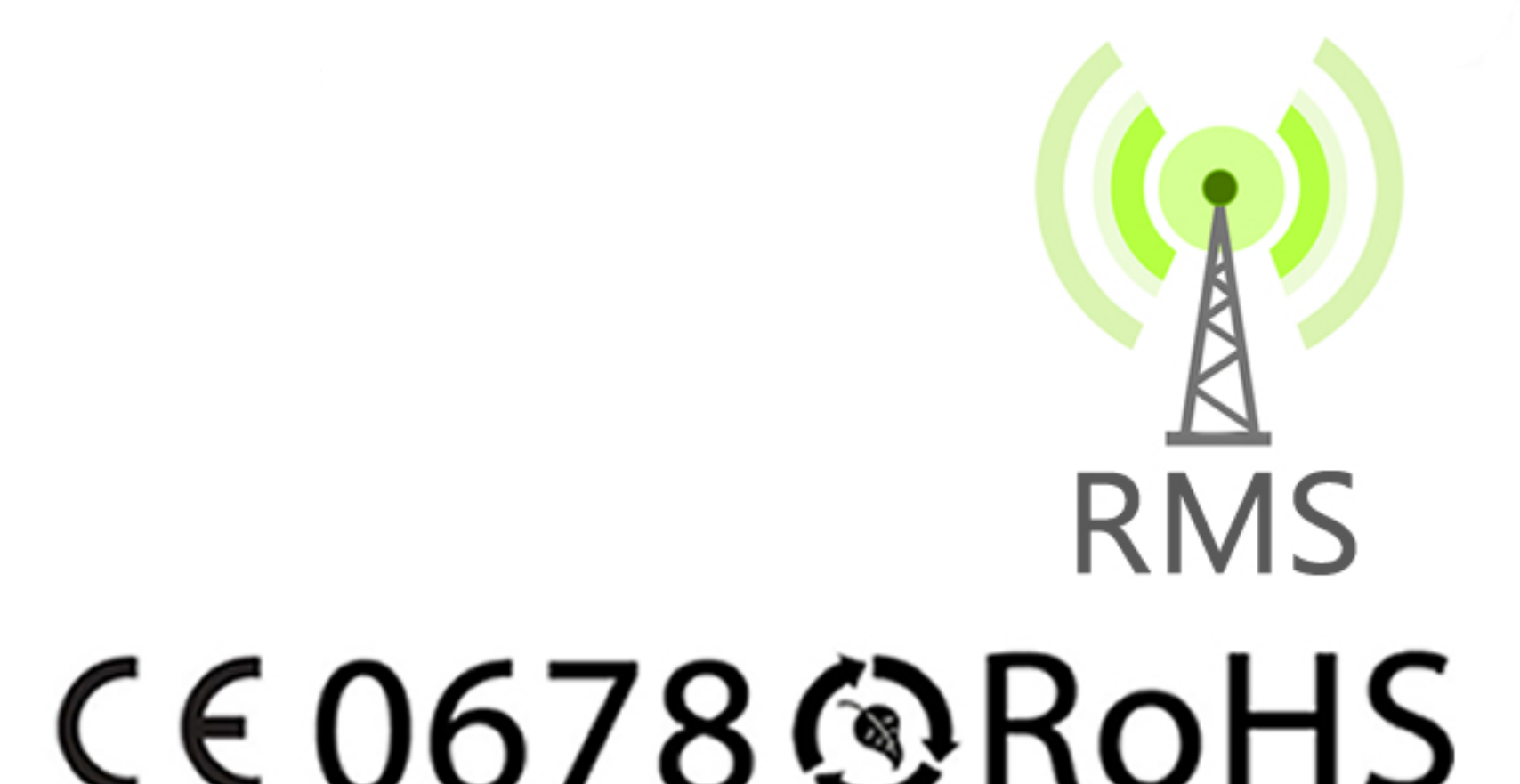
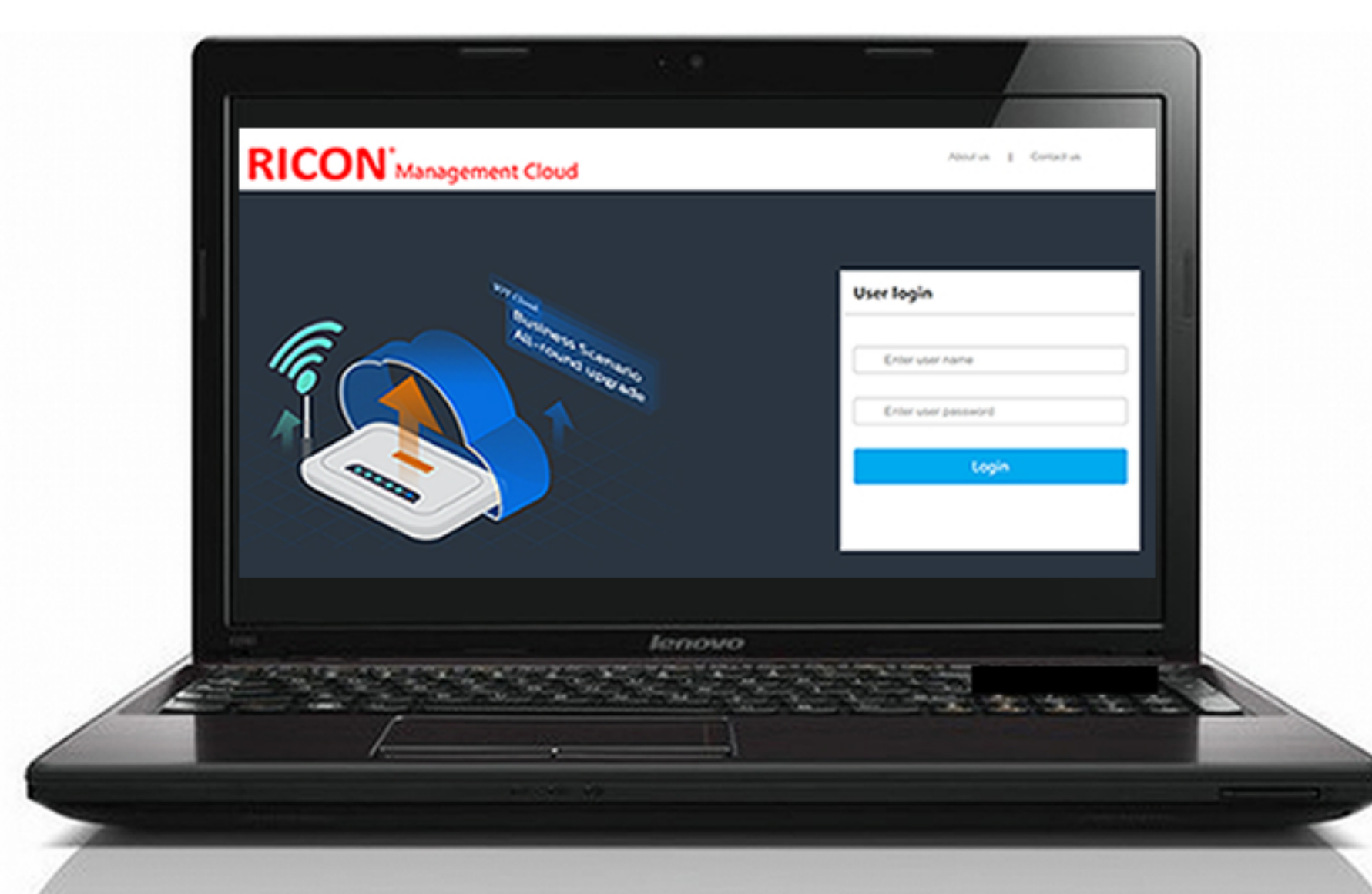
#### 1. hardware:

RICON 3G/4G routers



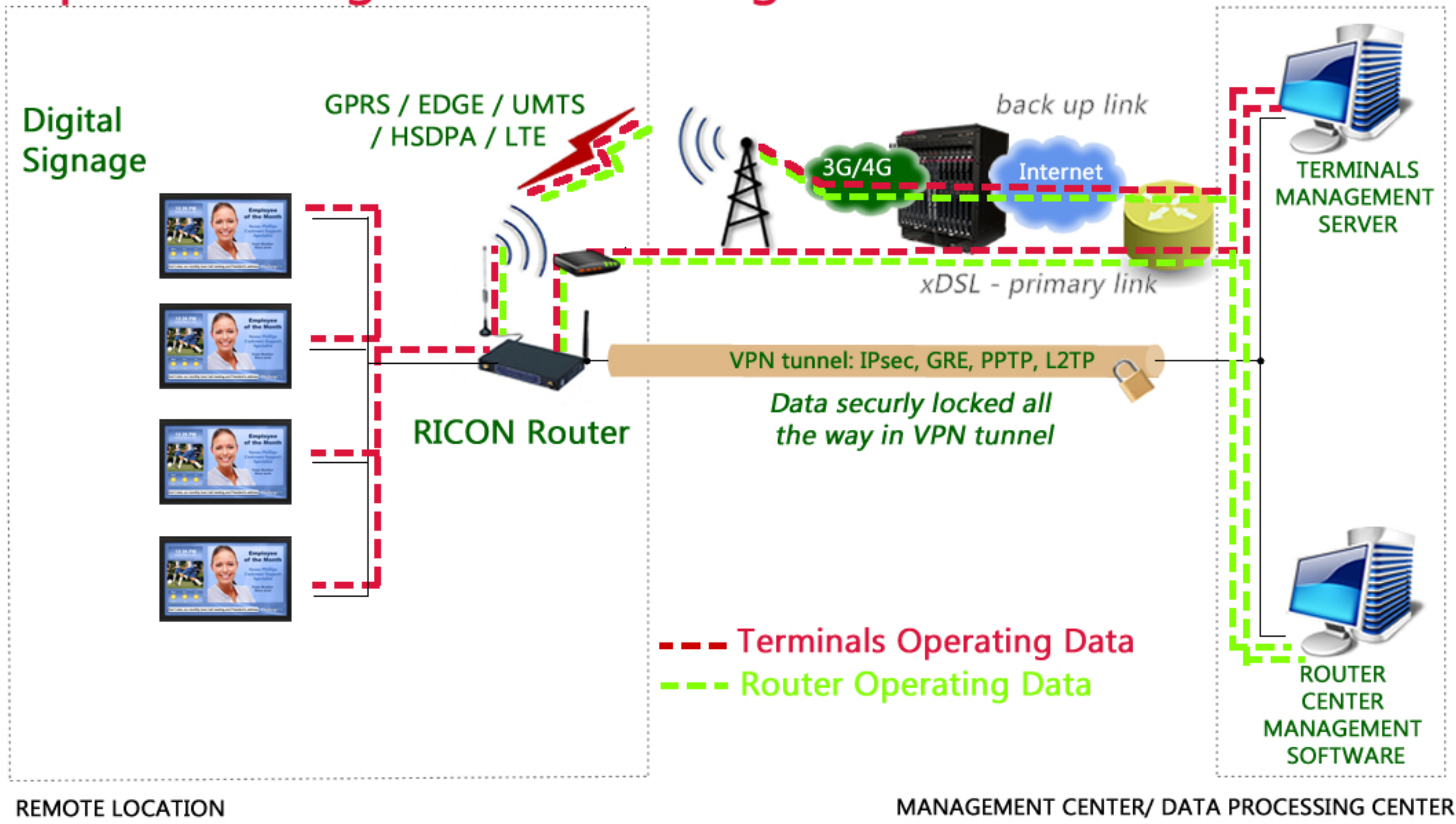
#### 2. software:

RICON RMS Ricon Management System

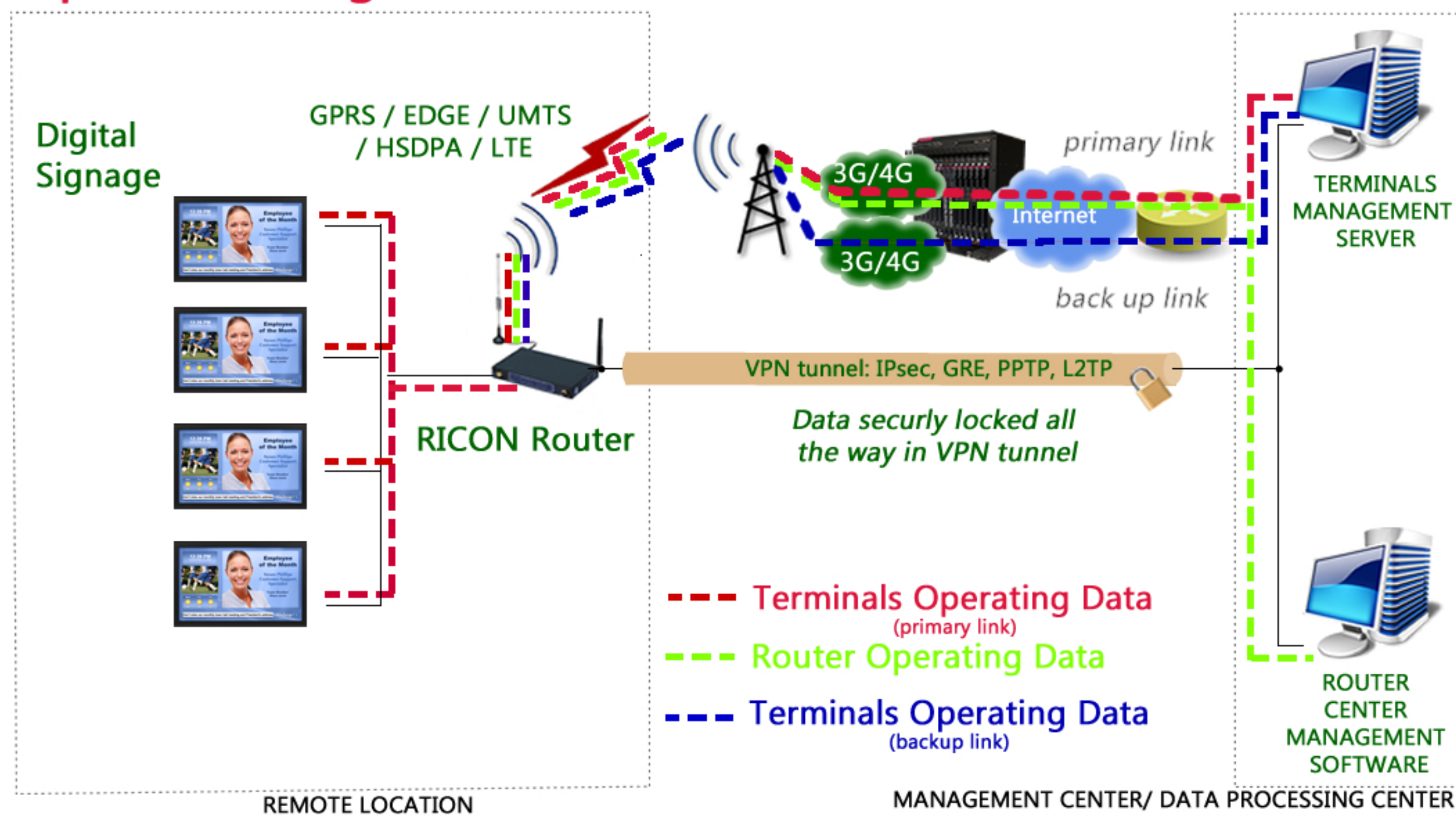




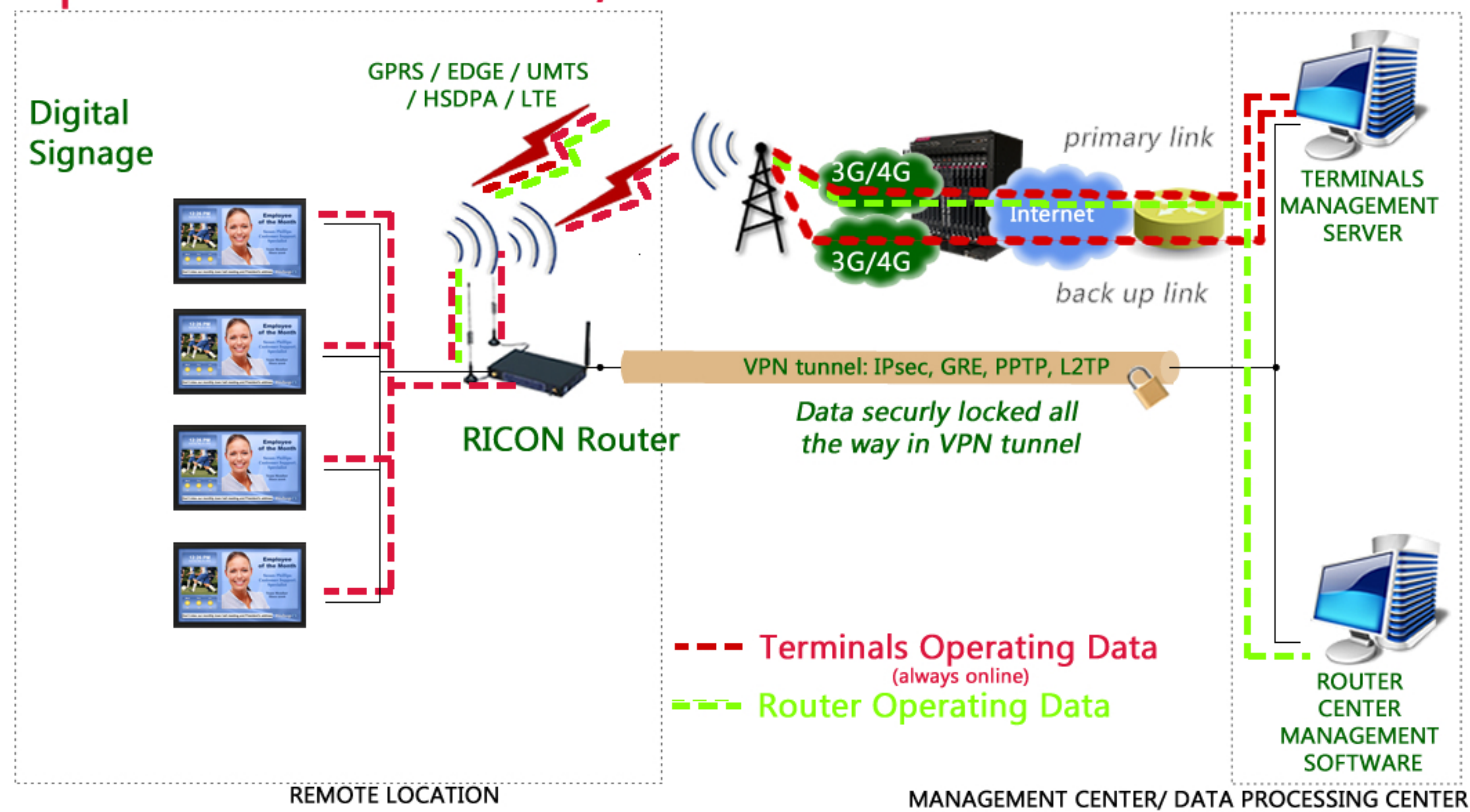
## Option 1: single module/ single SIM



## Option 2: single module/ dual SIM



## Option 3: dual module/ dual SIM



Portfolio of RICON products and services enables to deploy secure and robust wireless network. Embracing connectivity using wireless 3G and 4G technologies our Customers benefit from reliable network even in the most remote, hazardous locations. RICON team cooperates closely with Customers to provide them with a most suitable application. RICON has experience and know-how which we would like to share with you.

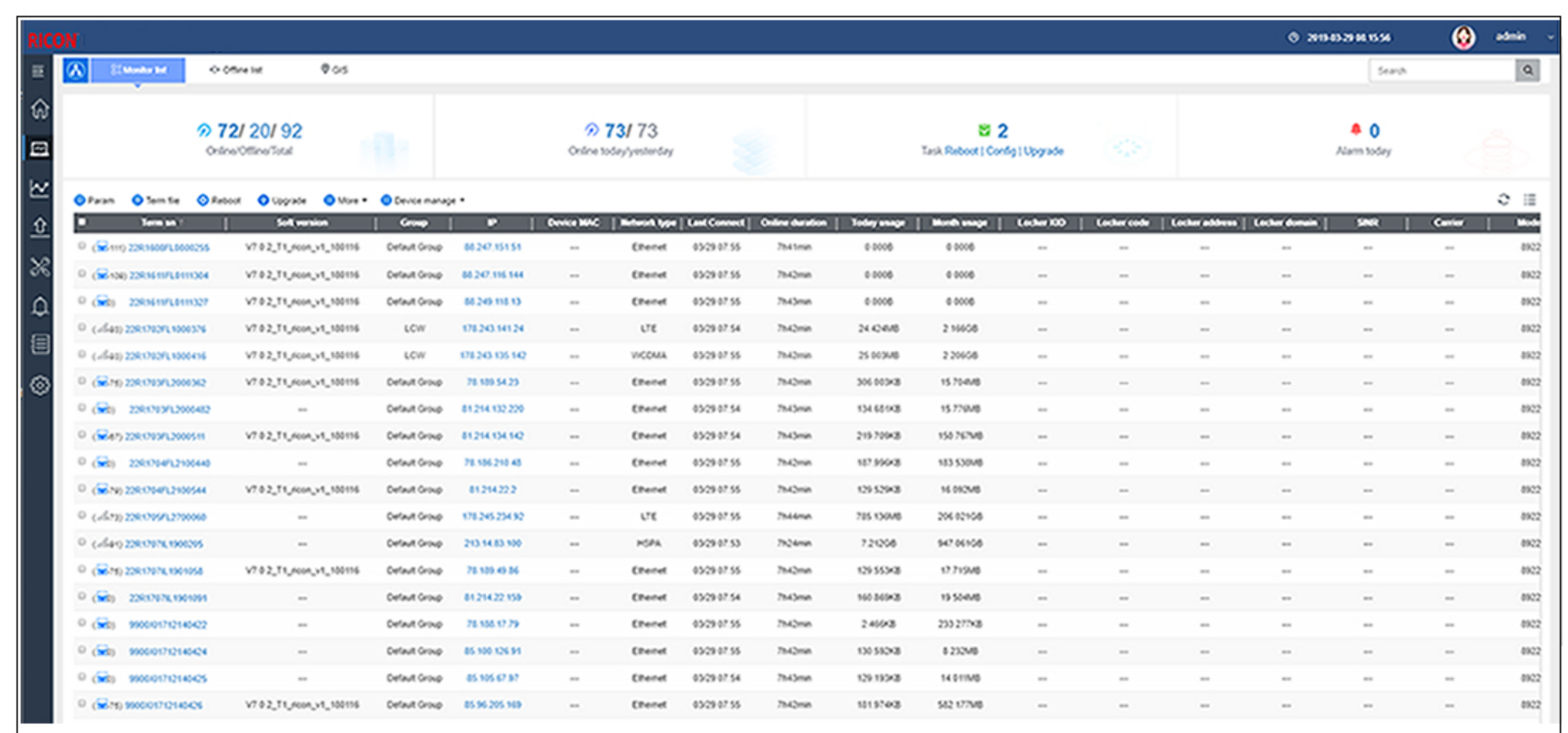
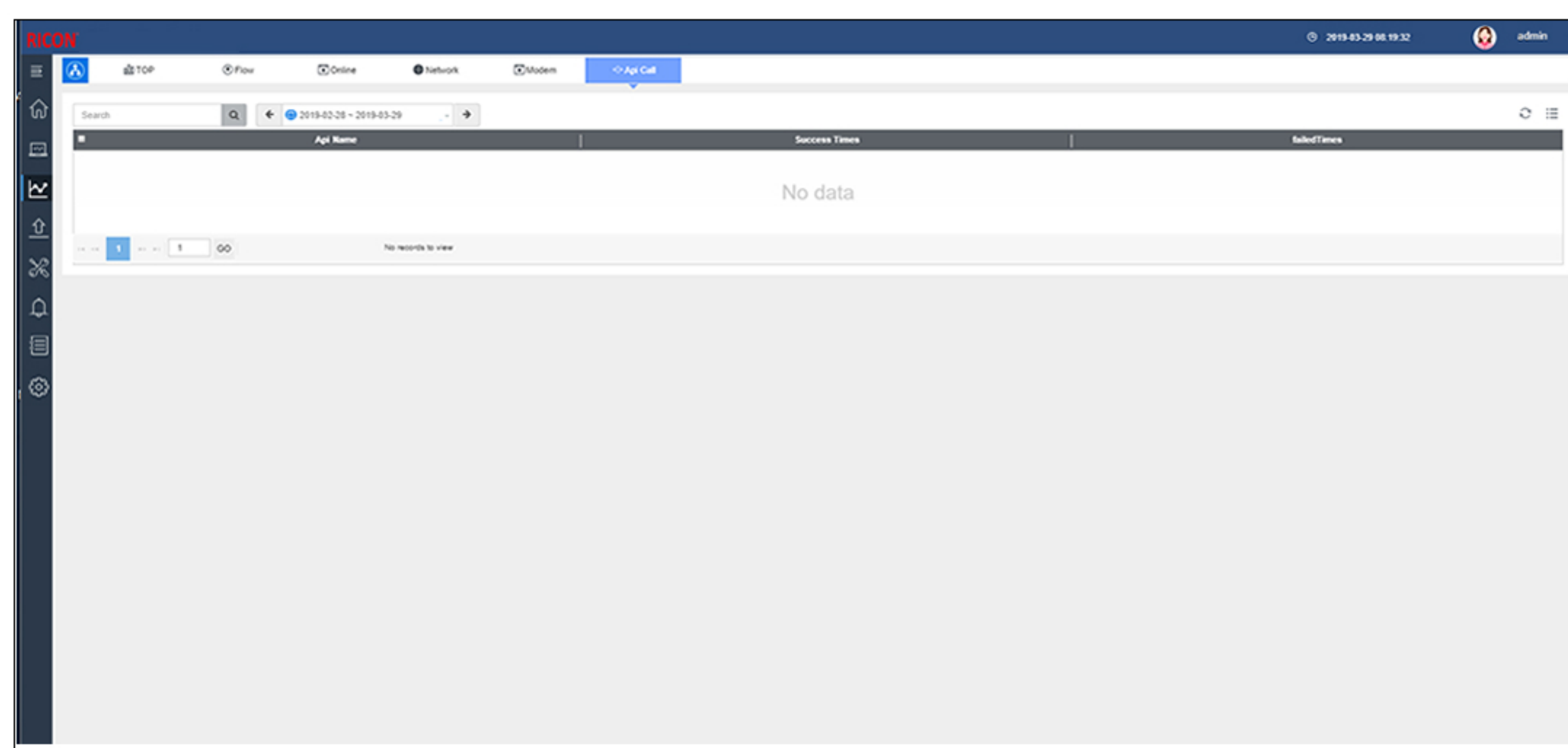
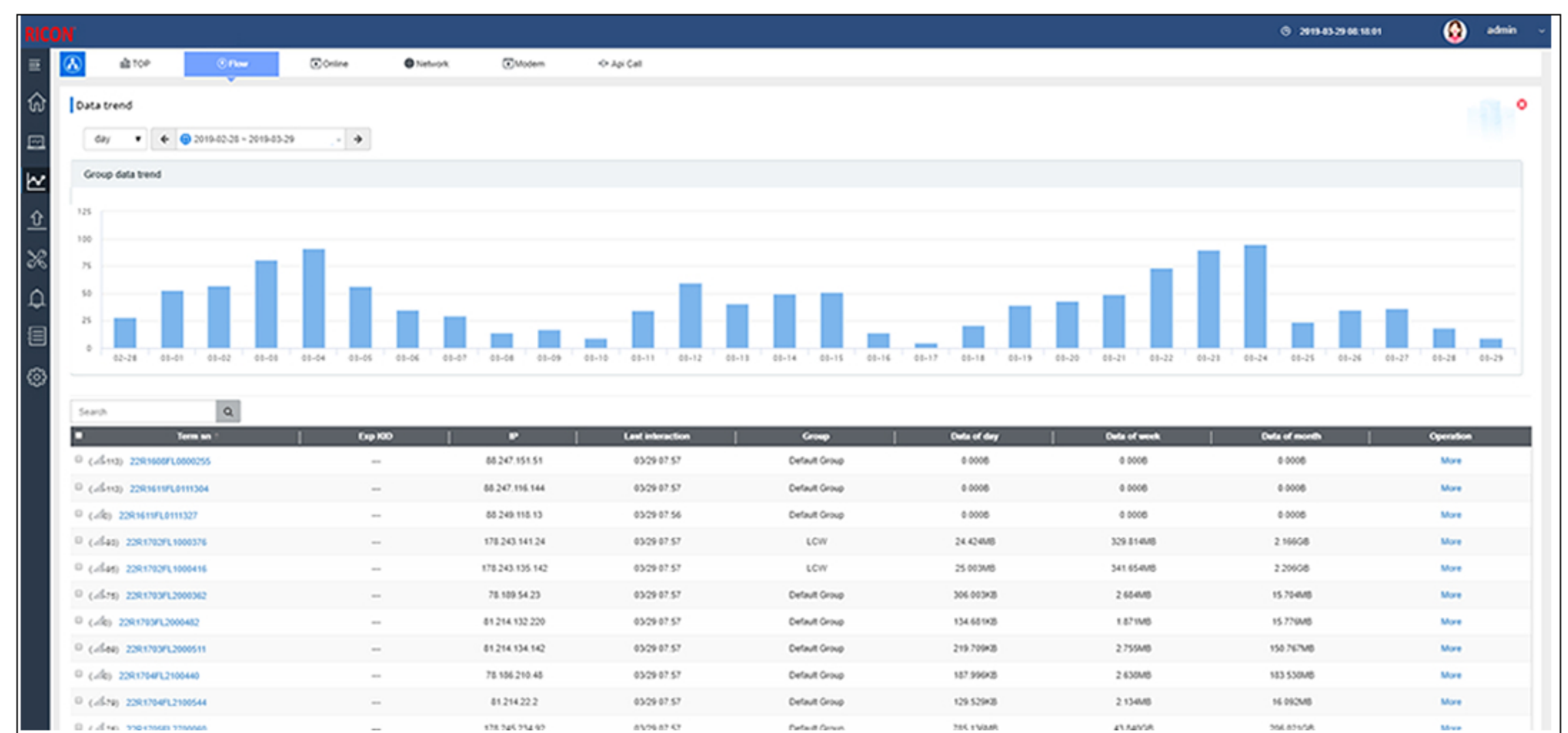
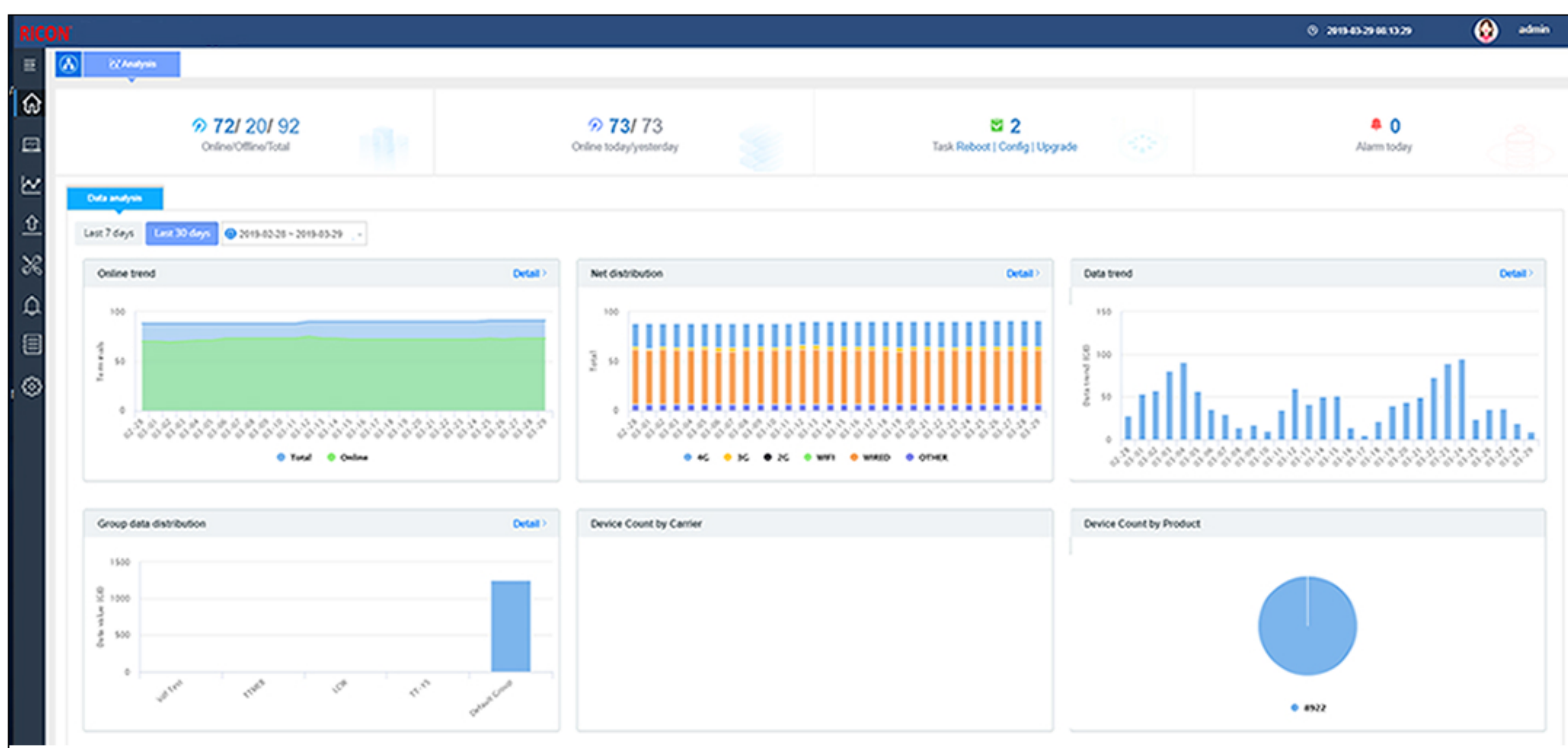
RICON routers and management platform major features are specially designed to meet multiply requirements of the secure wireless digital signage projects:

- Dual SIM functionality enable seamlessly alternative between two networks when one of the network signal is poor or enable to switch upon desire to other network with flexible switching time,
- Dual GSM module enable persistent network connectivity with no break in time during the network switch,
- Guaranteed security and privacy in all the transactions: VPN support, GRE over IPsec, IPsec over PPTP/L2TP,
- Safety mechanism to avoid unintentional SIM cards manipulations,
- 4 x Ethernet 10/100M is available by default,
- NAT/PAT/Port forwarding dynamically and static options are available by default,
- Router supports DHCP Server, DHCP relay and other standard DHCP features by default,
- HTTPS/HTTP supports are available by default,
- Telnet and SSH accesses,
- SNMP agent,
- LTE/ HSPA/HSDPA/UMTS/EDGE/GPRS Quadband support,
- RMA process for faulty routers,
- Configured via GUI and remotely via RMS Ricon Management System,
- Centralized control for firmware upgrade available as a section of the RMS Ricon Management System,
- Centralized statistic collection to show router uptime, network attachment, signal strength and where possible latency and packet loss per device and per router group on RMS Ricon Management System,
- Centralized control for the configuration management and group based configuration.
- For this specific project all the routers can be delivered with a project related pre-configuration.

RMS Ricon Management System centralizes access to all remote nodes, giving the user ultimate management control over the hardware. RMS Ricon Management System provides full control over data transfer and network diagnostics of thousands of routers and mobile devices on the network. Remote accessibility to the RMS Ricon Management System from any location gives the user fingertip control over multiple devices allowing the user to assess, diagnose, manage, control and resolve any problem within a very short period of time. Platform has a major impact on the cost of ownership, allowing redistribution of other valuable resources.

Some of the RMS Ricon Management System features include:

- touchless installation by remote configuration,
- device grouping,
- batch remote configuration,
- scheduled remote configuration,
- scheduled remote firmware upgrade/downgrade,
- multiple simultaneous terminal configuration updates,
- setting customized SLA warning thresholds,
- SLA based live alarms,
- live connectivity information,
- live reports,
- terminals detailed data stream info,
- terminals detailed data stream reports for trend analyses,
- terminals alarms reports for trend analyses,
- more information





# **RICON cellular - VPN - 3G/4G routers**

## Specifications

- Dual module/WAN/Wi-Fi multiple network mode backup
- WAN port support PPPoE, static IP, DHCP client.
- LCP/ICMP/flow/heartbeat check, ensure network usability
- SNMP network management, NTP support
- Local & remote firmware update
- Local & remote log check
- Supports DNS proxy and Dynamic DNS (DDNS)
- Supports timing operation

## Wi-Fi Characteristics

- Standard: IEEE 802.11b/g/n
- WEP, WPA and WPA2 encryption
- WPS key
- AP, Client, station, bridge mode support

## VPN

- IPSec
- PPTP/L2TP client
- GRE/IPIP

## Available Cellular Network

- LTE 800/900/1800/2100/2600MHz
- UMTS/HSPA+900/2100MHz
- GSM/GPRS 900/1800/1900MHz
- HSPA+/HSUPA/HSDPA/ WCDMA /UMTS
- 2100/1900/900/850/800MHz ;
- EDGE/GPRS/GSM 1900/1800/900/850MHz
- HSUPA/HSDPA/UMTS 2100/1900/850MHz
- EDGE/GPRS/GSM 1900/1800/900/850MHz
- HSUPA/HSDPA/UMTS 2100/1900/900/850MHz
- EDGE/GPRS/GSM 1900/1800/900/850MHz
- CDMA 2000/EVDO Rev.A 800MHz
- CDMA 2000/EVDO Rev.A 800/1900MHz

## Interfaces

- 4×10/100Mb LAN interface
- 1×10/100Mb WAN interface
- 1× RS-232 console port(RJ45)
- 2× SMA-K antenna interface
- 2× SMA-K antenna interface (Wi-Fi)
- 2× Standard SIM/R-UIM interface
- 1× Standard DC power interface

## Status LEDs

- System
- Power
- WLAN (Optional)
- WAN
- LAN (LAN1~LAN4)
- RF
- NET

## Routing Protocols

- Static route
- RIPv2/OSPF dynamic route

## Firewall & Filtering

- IP packet/Domain/MAC filter
- NAT
- DMZ

## Ethernet Standard

- IEEE 802.3
- IEEE 802.3u

## Other

- 188mm x 121mm x 28mm
- Weight: 580g
- Temperature: -30~+70

## Device Management

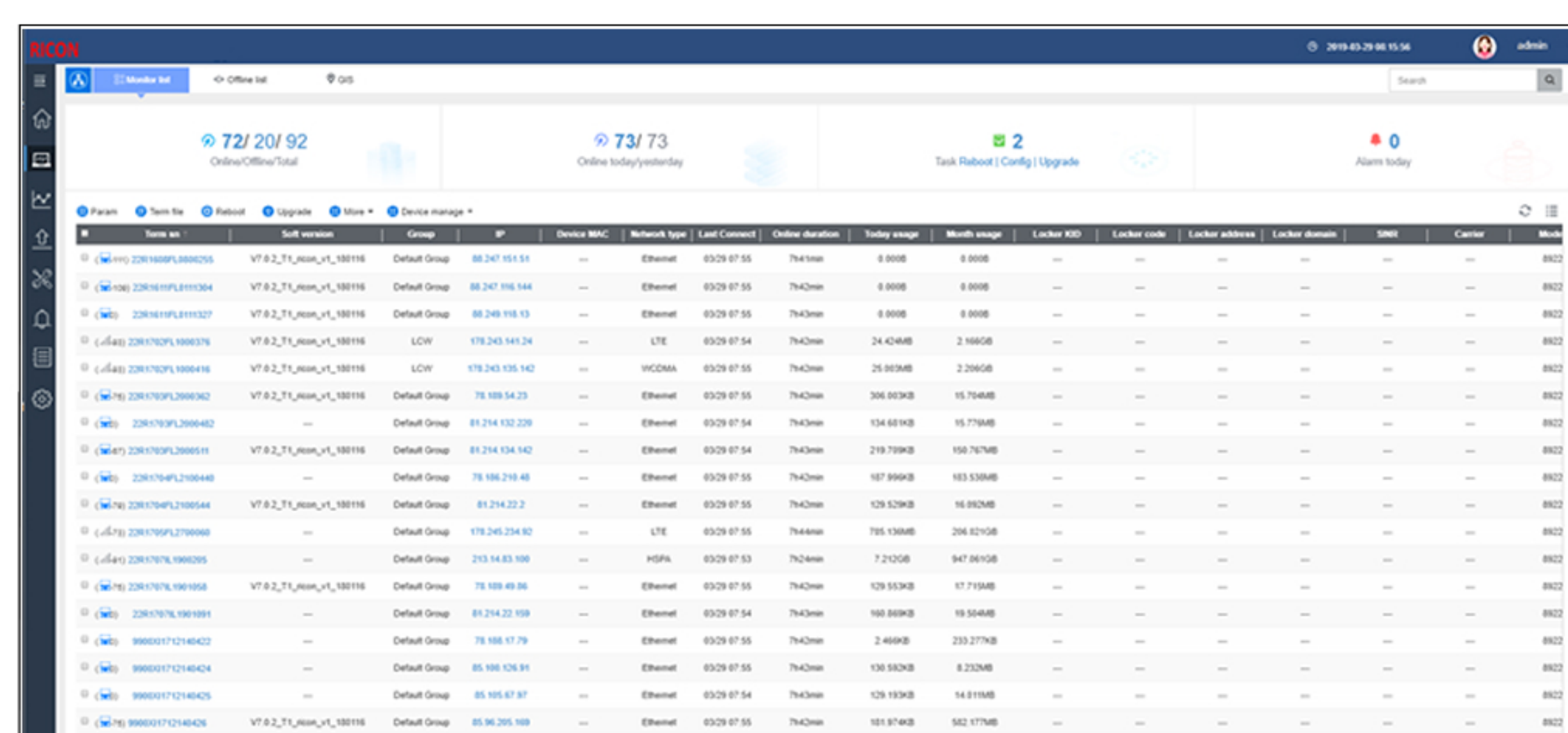
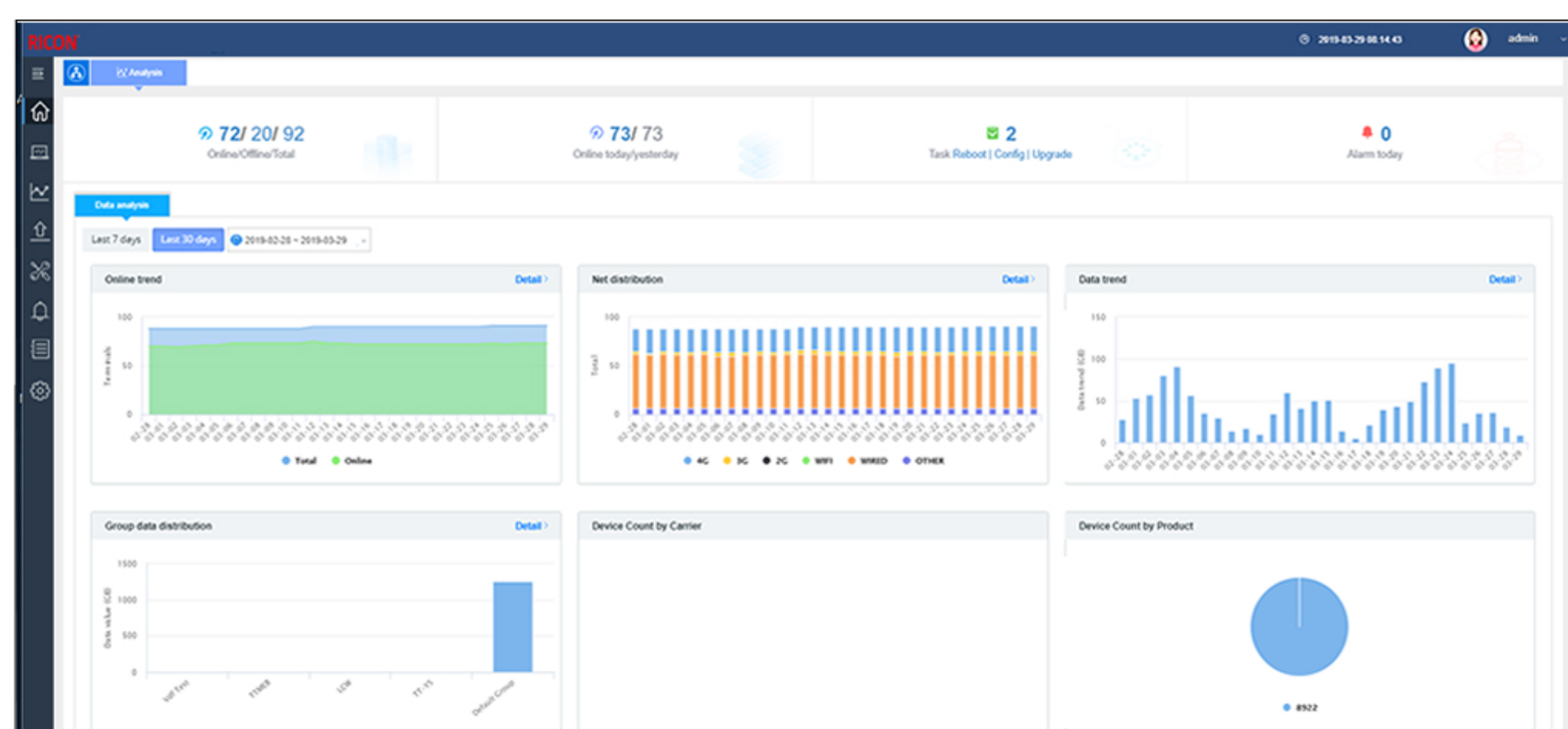
- Local or remote web browser (IE v8 or above)
- CLI/Telnet command
- RMS Ricon Management System (optional)
- SSH config (optional)

## RICON RMS Ricon Management System

provides full control of multiply 3G routers for diagnostics and maintenance of all the mobile devices on the network.



CE 0678 RoHS

A screenshot of the Ricon RMS router list table. The table contains columns for Router ID, Name, IP, Service MAC, Network Type, Last Connect, Online duration, Timing range, Month usage, Locked RSD, Router code, Router address, Router status, SNMS, Center, and Model. It lists multiple routers with their respective configurations and status.