EMR-4

Compact WAN router with Encapsulation

The **EMR-4** is a **WAN router** specifically designed for **Secondary Substations** that offers interfaces to communicate with **serial devices**
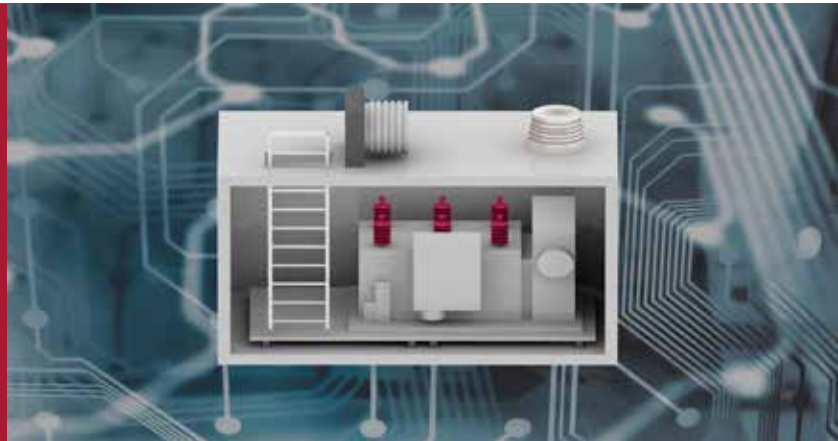
The **EMR-4** allows remote access to local networks or Ethernet devices.

The **EMR-4** makes it possible to integrate Non-IP serial devices into a secure IP network.

The WAN interface of the **EMR-4** can operate on 2G, 3G and 4G networks.

The **EMR-4** has been designed to provide secure access to both Ethernet and serial devices.

Its interfaces have **various connectors** to adapt to the different connection needs that may exist.

It is capable of **transporting different serial protocols** over a TCP/IP network using public cellular networks.

The EMR-4 supports the **SNMPv1**, **SNMPv2c** and **SNMPv3** management protocols, as well as other protocols and services such as **NAT, DHCP, DNS, NTP/SNTP, TACACS+** and **RADIUS**.

Main Applications

- ✓ Remote access to local networks or to Ethernet devices.
- ✓ Serial to IP encapsulation.
- ✓ Back-up and Alternative Control links.
- ✓ Connections in remote locations.
- ✓ Mobile networks.
- ✓ Secure access to remote data.

Equipment Interfaces

- ✓ 2 Fast Ethernet ports type 10/100Base-Tx (RJ-45 female).
- ✓ 1 wireless 2G, 3G and 4G WAN interface, with 2 external slots for Mini SIM (2FF) cards.
- ✓ 1 RJ-45 port intended for service console and asynchronous serial port (COM) RS-485.
- ✓ 1 asynchronous serial port (COM), DB9 female (DCE), for RS-232 interface.

Main Facilities

Automatic port speed detection. Static routing information (configured by the user). **Dynamic routing information** (RIP & OSPF routing protocol). **VRRP** redundancy protocol. **NAT** rules. **IPSec** tunnels with DMVPN (Dynamic Multipoint VPN) support. **NHRP** (Next Hop Resolution Protocol). **IPIP** (IP over IP) and **GRE** tunnels. VLANs management per port. Filtering. Stateful IP firewall. Autotest. **QoS per origin and/or destination IP address. QoS per type of traffic (DSCP or TOS) and service (protocol and port)**. Sending of AT commands via SMS.

Management System

Local and remote access via **console** (115200 bit/s) or built-in **web server** (HTTP/HTTPS), **Telnet** and **SSH**.

Additional Services

- · SNMP v1, v2c and v3 agent.
- · DHCP server and client.
- · NTP/SNTP server and client.
- · TACACS+ client.
- · RADIUS client.
- · FTP/FTPs server.
- · DNS client.
- · DHCP Relay.
- · DNS Relay.

Technical Information

WAN interface with UMTS/HSPA (3G)

- • UMTS/HSPA+: 850/900/2100MHz.
  HSPA+ data up to 7.2 Mbit/s (downlink) and 5.76 Mbit/s (uplink).
- • GSM/GPRS/EDGE: 850/900/1800/1900 MHz.

WAN interface with LTE (4G)

- • LTE: 800/900/1800/2100/2600 MHz.
  LTE data up to 150 Mbit/s (downlink) and 50 Mbit/s (uplink). Cat.4.
- • UMTS/HSPA+: 900/2100MHz.
  HSPA+ data up to 42 Mbit/s (downlink) and 5.76 Mbit/s (uplink).
- • GSM/GPRS/EDGE: 900/1800MHz.

Encapsulation protocols

- ✓ IEC 60870-5 101/102/103 (the first two with the variants to support link addresses of 1 or 2 bytes).
- ✓ DLMS, GESTEL, MODBUS, DNP 3.0, SAP20, PROCOME, Pid1, Twc.

Asynchronous data port characteristics (DCE)

- ✓ Data bits: 5, 6, 7 or 8
- ✓ Stop bits: 1 or 2
- ✓ Parity: odd, even or none
- ✓ Speed: from 600 bit/s to 115200 bit/s
- ✓ Flow control: none, hardware or software
- ✓ Interface: V.24/V.28 ITU-T (EIA RS-232C) or RS-485

Mounting

DIN rail (EN 50022, BS 5548, DIN 46277-3)

Dimensions: Height: 135 mm; Width: 200 mm; Depth: 70 mm

Weight: 600 g

Power supply

184-264 Vac. 1.8 s voltage dip

Maximum power consumption: 6 W

Temperature range	From -25° C to +70°C
Material	Lexan 920 fire-resistant (UL 94 V0) plastic
EMI immunity & environment compliance	IEC 61850-3
	IEC 61000-6-5