

MicROS 410

Broadband client node for wired IIoT clients



MicROS 410 client nodes are used to connect wired Industrial Internet of Things (IIoT) clients to TropOS broadband mesh networks. They enable cost-effective and highly secure IP communications for utility, oil and gas, mining and industrial applications.

MicROS 410 enables monitoring and control of field automation endpoints such as intelligent electrical devices, industrial process controllers and SCADA devices. Ethernet and serial interfaces supporting DNP3 and Modbus provide future-proof operation with new and legacy devices. An integrated firewall provides enterprise-class security. This enterprise security feature extends to the wired Ethernet and serial ports.

The MicROS 410 has one 10/100BASE-T interface and serial interfaces (RS-232 and RS-485). An integrated GPS receiver simplifies installation, commissioning and asset tracking.

Wireless

- IEEE 802.11b/g/n radio
 - Modulation: 802.11g/n - OFDM (64-QAM, 16-QAM, QPSK, BPSK); 802.11b - DSSS (DBPSK, DQPSK, CCK)
 - Media access protocol: CSMA/CA with ACK
 - TX power (dBm EIRP):

Band (MHz)	FCC	ETSI	Brazil
2400-2473	20-36	N/A	N/A
2400-2483	N/A	5-20	11-26

- +13 dBi integrated, cross-polarized, 2x2 MIMO directional antenna

	Beamwidth (gain)
Horizontal	30° (3dB), 40° (6dB)
Vertical	35° (3dB), 45° (6dB)

assumes use of 8 dBi antennas

- RX sensitivity:
 - 99 dBm @ 1 Mbps
 - 95 dBm @ 6 Mbps
- Integrated GPS

Interfaces

- Full 802.11b/g/n wireless
- One IEEE 802.3u autosensing 10/100BASE-T Ethernet port
- Serial: RS-232 and RS-485
- Protocols: DNP3, Modbus (RTU), Modbus (ASCII), raw serial
- Integrated GPS receiver
- IPv4, IPv6 ready
- 802.1q VLAN support (ESSID and IP based tagging)
- Support for static and dynamic addresses for wired clients
- IP multicast forwarding, IGMPv3; IGMP Proxy
- ANI (Adaptive Noise Immunity)
- Automatic interference avoidance
- Network Address Translation (NAT) support for wired clients

Quality of service

- 802.11e WMM
- 802.1p/q with 4 queues per VLAN and ESSID
- 802.1p and DSCP

Management

- Local and remote management tools via HTTPS
- Identity-based authentication (4 levels)
- Configuration save and restore
- Over the air software updates
- SNMPv3
- Wireless network and client monitoring and statistics
- SuprOS carrier class NMS support

Security

- IPsec VPNs with tunnels to wired client interfaces using AES
- Authentication: WPA, WPA2, 802.11i, RADIUS, 802.1x (includes EAP-TLS, EAP-TTLS, EAP-SIM, PEAP)
- Encryption: open, WEP, TKIP, AES-CCM
- AES encryption of mesh and control traffic
- Technical controls required to achieve NERC CIP v5 compliance
- Multiple BSSIDs & ESSIDs (ESSID suppression)
- Integrated firewall
 - Packet filtering based on TCP/UDP port, protocol, SA, DA
 - Peer-to-peer blocking
 - Client access control lists
- Evil twin detection and reporting
- Denial of service (DoS) attack detection and reporting
- Jamming attack detection and reporting

Environmental specifications

- Operating temperature range: -40°C to 75°C
- Storage temperature range: -40°C to 85°C
- Weather rating: IEC 60529 IP67
- Wind survivability: >165 mph (265.54 kmph)
- Wind loading (165 mph/265.54 kmph): < 210 Newtons
- ASTM B117 salt fog rust resistance compliant
- Shock & vibration: ETSI 300-19-2-4 spec T4.1E class 4M3
- Transportation: ISTA 2A

Power

- 7-32 VDC
- Power consumption: 2 W typical
- Power-on/network status LED
- Alignment LED

Physical

- Dimensions without mounting brackets: 9.85" (25 cm) wide x 9.85" (25 cm) high, 3.5" (8.8 cm) deep
- Weight: 4.5 lbs (2.05 kg)

Wireless approvals

- FCC CFR 47 Part 15
- Industry Canada RSS 247
- EN 301 489 (pending)
- EN 300 328 (pending)

Safety approvals

- EN 60950
- UL 60950-1
- CSA 22.2 No. 60950-1
- CE
- IEEE 1613

Protection

- Antenna protection integrated
- Electrical protection:
 - EN61000-4-4 Level 2 electrical fast transient burst immunity
 - EN61000-4-3 Level 2 EMC field immunity
 - EN61000-4-2 Level 2 (contact), Level 3 (air) ESD immunity
 - External protection highly recommended

Warranty

- Five (5) year on parts and labor; return to point of purchase
- Software and hardware maintenance plans available

Hazardous environment certification (pending)

- Class I Division 2 Groups A, B C and D; T4

Click the link to find out more information about our [wireless mesh routers](#).