TAP-6226 Series

Rugged trackside wireless unit

- 2 dual-band radios, IEEE 802.11a/b/g compliant
- Railway approved IP68 housing
- Controller-based Turbo Roaming
- 2 fiber SFP ports and 4 PoE ports with M12 LAN connectors
- High transmission power for extended reach
- Complies with a portion of EN 50155 specifications
- -40 to 75°C operating temperature range

Introduction

The TAP-6226 trackside wireless unit is designed for board to ground wireless communication. It is a highly compact and rugged wireless unit that integrates two access points, a managed fiber switch, and a wide-range AC/DC power supply, all into one box. The IP68 housing allows the unit to withstand the harshest weather, and M12 connectors make the unit shock and vibration proof. The TAP-6226 supports advanced controller-based Turbo Roaming technology for applications such as Communication-Based Train Control (CBTC). The unit can supply power to up to 4 PoE devices while providing reliable LAN communication with Moxa's Turbo Chain technology.

Advanced Mobility and Reliability

- Controller-based L3 Turbo Roaming
- Mobile IP support
- 2 dual-band radios: 2.4 GHz and 5.1 to 5.9 GHz
- Turbo Chain support (100 ms recovery time)
- WPA/WPA2 and 802.11i support
- IEEE 802.1X/RADIUS support

Built for Transportation Applications

- Isolated 110 to 220 VDC/VAC power input
- High transmission power, 400 mW
- Supplies power through 4 PoE ports
- 2 fiber SFP ports for backbone installation
- Wide temperature (-40 to 75°C) and IP68 housing

Specifications

WLAN Interface

Standards:
IEEE 802.11a/b/g for Wireless LAN
IEEE 802.11i for Wireless Security
IEEE 802.3 for 10BaseT
IEEE 802.3u for 100BaseTX
IEEE 802.3af for Power-over-Ethernet
IEEE 802.1D for Spanning Tree Protocol
IEEE 802.1w for Rapid STP
IEEE 802.1p for Class of Service
IEEE 802.1Q for VLAN

Spread Spectrum and Modulation (typical):
• DSSS with DBPSK, DQPSK, CCK
• OFDM with BPSK, QPSK, 16QAM, 64QAM
• 802.11b: CCK @ 11/5.5 Mbps, DQPSK @ 2 Mbps, DBPSK @ 11 Mbps
• 802.11a/g: 64QAM @ 54/48 Mbps, 16QAM @ 36/24 Mbps, QPSK @ 18/12 Mbps, BPSK @ 9/6 Mbps

Operating Channels (central frequency):
US:
2.412 to 2.462 GHz (802.11abg, 11 channels)
5.18 to 5.24 GHz (802.11a, 4 channels)
5.26 to 5.825 GHz (optional)
EU:
2.412 to 2.472 GHz (802.11abg, 13 channels)
5.18 to 5.24 GHz (802.11a, 4 channels)
5.26 to 5.825 GHz (optional)
*Special frequency bands (such as 5.9 GHz) is available for customization.

Security:
• SSID broadcast enable/disable
• Firewall for MAC/IP/Protocol/Port-based filtering
• 64-bit and 128-bit WEP encryption, WPA /WPA2-Personal and Enterprise (IEEE 802.1X/RADIUS, TKIP and AES)

Transmission Rates:
802.11b: 1, 2, 5.5, 11 Mbps
802.11a/g: 6, 9, 12, 18, 24, 36, 48, 54 Mbps

TX Transmit Power:
802.11b:
Typ. 26±1.5 dBm @ 1 to 11 Mbps
802.11g:
Typ. 26±1.5 dBm @ 6 to 24 Mbps, Typ. 25±1.5 dBm @ 36 Mbps, Typ. 24±1.5 dBm @ 48 Mbps, Typ. 23±1.5 dBm @ 54 Mbps
802.11a:
Typ. 26±1.5 dBm @ 6 to Mbps, Typ. 25±1.5 dBm @ 36Mbps, Typ. 24±1.5 dBm @ 48 Mbps, Typ. 23±1.5 dBm @ 54 Mbps

RX Sensitivity:
802.11b:
-97 dBm @ 1 Mbps, -94 dBm @ 2 Mbps, -92 dBm @ 5.5 Mbps, -90 dBm @ 11 Mbps
802.11g:
-93 dBm @ 6 Mbps, -91 dBm @ 9 Mbps, -90 dBm @ 12 Mbps, -88 dBm @ 18 Mbps, -84 dBm @ 24 Mbps, -80 dBm @ 36 Mbps, -76 dBm @ 48 Mbps, -74 dBm @ 54 Mbps
802.11a:
-90 dBm @ 6 Mbps, -89 dBm @ 9 Mbps, -89 dBm @ 12 Mbps, -85 dBm @ 18 Mbps, -83 dBm @ 24 Mbps, -79 dBm @ 36 Mbps, -75 dBm @ 48 Mbps, -74 dBm @ 54 Mbps

Protocol Support

General Protocols: Proxy ARP, DNS, HTTP, HTTPS, IP, ICMP, SNTP, TCP, UDP, RADIUS, SNMP v1/v2/v3, PPPoE, DHCP, STP/RSTP

Interface

Connector for External Antennas: N-type (female)
Fiber Ports: 2, 100BaseSFP slot
Console Port: M12 A-coded 5-pin male connector
LED Indicators: PWR1, PWR2, PoE1-4, FAULT, STATE, HEAD, TAIL, LAN1-6, WLAN1, WLAN2
Fast Ethernet ports: 4, side cabling, M12 D-coded 4-pin female connector, 10/100BaseT(X) auto negotiation speed, F/H duplex mode, and auto MDI/MDI-X connection, 802.1af PoE power budget
Fiber Module: 100Base multi-mode 1300 nm wavelength with LC connector for 4 km transmission (50/125 µm or 62.5/125 µm 800 MHz-km @ 1300 nm wavelength)

Physical Characteristics

Housing: Metal, IP68 protection
Weight: 10 kg
Dimensions: 322 x 282 x 159 mm
Installation: Wall mounting

Environmental Limits

Operating Temperature: -40 to 75°C (-40 to 167°F)
Storage Temperature: -40 to 85°C (-40 to 185°F)
Ambient Relative Humidity: 5% to 95% (non-condensing)

Power Requirements

Input Voltage: 110/220 VDC/VAC (88 to 300 VDC, 85 to 264 VAC)
Connector: M23
Power Consumption:
AC input: 110 to 220 VAC, 50 to 60 Hz, 0.68 A (max.)
DC input: 110 to 220 VDC, 0.68 A (max.)
Maximum 74.8 watts
Reverse Polarity Protection: Present
Overload Current Protection: Present

Standards and Certifications

Safety: UL 60950-1, EN 60950-1
EMC: EN 301 489-1/17; FCC Part 15, Subpart B; EN 55022/55024
Radio: EN 300 328, EN 301 893, FCC ID SLE-WAPA004
Rail Traffic: EN 50155*, EN 50121-1/4
Note: Please check Moxa's website for the most up-to-date certification status.

Reliability

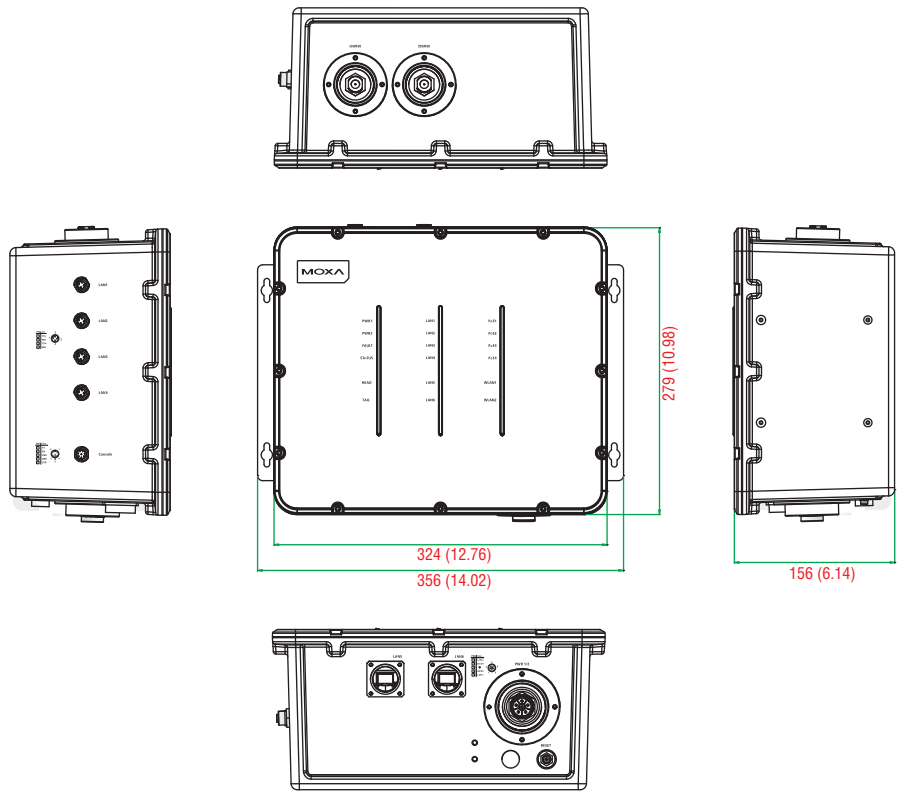
MTBF (mean time between failures):
TAP-6226-TC: 382,735 hrs

Warranty

Warranty Period: 5 years
Details: See www.moxa.com/warranty

Dimensions

Unit: mm (inch)



Ordering Information

Available Models

TAP-6226-TC-US-T: Rugged trackside wireless access point, US band
TAP-6226-TC-EU-T: Rugged trackside wireless access point, EU band

Optional Accessories (can be purchased separately)

SFP-1FESLC-T: SFP module with 100Base single-mode with LC connector for 40 km transmission, 1310 nm wavelength.
SFP-1FELLC-T: SFP module with 100Base single-mode with LC connector for 80 km transmission, 1550 nm wavelength.

Package Checklist

- TAP-6226 trackside wireless unit
- 5 protective caps for console port and LAN ports
- Fiber panel mounting kit (optional)
- Wall mounting kit
- Warranty card