

TAP-323シリーズ

鉄道列車 - 地上間沿線用Wi-Fi 4（802.11n）IP68デュアルラジオワイヤレスAP



機能とメリット

- 冗長デュアルACまたはDC電源により、柔軟な沿線展開を実現
- さまざまな列車 - 地上間アプリケーションに対応するデュアルラジオ
- Turbo Chainにより沿線ネットワーク冗長化を実現する2つの統合光ファイバポート
- 50 ms未満のコントローラベースTurbo Roamingにより、シームレスな列車 - 地上間通信を実現

認証



EN 50155



製品紹介

TAP-323シリーズは、Wi-Fi 4（802.11n）鉄道列車 - 地上間沿線IP68保護等級のデュアルラジオワイヤレスAPであり、CBTC、CCTV、およびBBRS通信向けに設計されており、ハンドオーバー時間50ミリ秒未満のシームレスなコントローラベースTurbo Roamingをサポートしています。TAP-323は非常にコンパクトで堅牢なワイヤレスユニットであり、2つのアクセスポイント、マネージドファイバスイッチ、および広範囲AC/DC電源を単一のボックスに組み合わせています。TAP-323シリーズは、MoxaのTurbo Chain技術を搭載した信頼性の高いLAN通信を提供しながら、最大4つのPoEデバイスに電力を供給できます。

仕様

WLAN Interface

WLAN Standards	2.4 GHz: 802.11b/g/n with 64 QAM support, 20/40 MHz 5 GHz: 802.11a/n with 64 QAM support, 20/40 MHz
Frequency Band for US (20 MHz operating channels)	TAP-323-US models only: 2.412 to 2.462 GHz (11 channels) 5.180 to 5.240 GHz (4 channels) 5.260 to 5.320 GHz (4 channels) ¹ 5.500 to 5.700 GHz (8 channels) Excludes 5.600 to 5.640 ¹ 5.745 to 5.825 GHz (5 channels)
Frequency Band for EU (20 MHz operating channels)	TAP-323-EU models only: 2.412 to 2.472 GHz (13 channels) 5.180 to 5.240 GHz (4 channels) 5.260 to 5.320 GHz (4 channels) 5.500 to 5.700 GHz (11 channels)
Frequency Band for JP (20 MHz operating channels)	TAP-323-JP models only: 2.412 to 2.484 GHz (14 channels) 5.180 to 5.240 GHz (4 channels) 5.260 to 5.320 GHz (4 channels) 5.500 to 5.700 GHz (11 channels)
Receiver Sensitivity for 802.11a (measured at 5.680 GHz)	Typ. -90 @ 6 Mbps Typ. -88 @ 9 Mbps Typ. -88 @ 12 Mbps Typ. -85 @ 18 Mbps Typ. -81 @ 24 Mbps Typ. -78 @ 36 Mbps

1. DFS (Dynamic Frequency Selection/動的周波数選択) チャンネル対応：APモードでは、レーダー信号が検出された場合、自動的に別のチャンネルへ切り替わります。ただし、規制により、チャンネル切り替え後、サービス開始前には60秒間の利用可能性確認期間が必要です。

	Typ. -74 @ 48 Mbps Typ. -74 @ 54 Mbps Note: Due to a limitation in the receiver sensitivity performance for channels 153 and 161, it is recommended to avoid using these channels in your critical applications.
Receiver Sensitivity for 802.11n (5 GHz; measured at 5.680 GHz)	Typ. -88 dBm @ MCS0 20 MHz Typ. -85 dBm @ MCS1 20 MHz Typ. -82 dBm @ MCS2 20 MHz Typ. -79 dBm @ MCS3 20 MHz Typ. -76 dBm @ MCS4 20 MHz Typ. -71 dBm @ MCS5 20 MHz Typ. -70 dBm @ MCS6 20 MHz Typ. -69 dBm @ MCS7 20 MHz Typ. -95 dBm @ MCS8 20 MHz Typ. -91 dBm @ MCS9 20 MHz Typ. -87 dBm @ MCS10 20 MHz Typ. -80 dBm @ MCS11 20 MHz Typ. -78 dBm @ MCS12 20 MHz Typ. -74 dBm @ MCS13 20 MHz Typ. -72 dBm @ MCS14 20 MHz Typ. -71 dBm @ MCS15 20 MHz Typ. -84 dBm @ MCS0 40 MHz Typ. -81 dBm @ MCS1 40 MHz Typ. -77 dBm @ MCS2 40 MHz Typ. -75 dBm @ MCS3 40 MHz Typ. -71 dBm @ MCS4 40 MHz Typ. -67 dBm @ MCS5 40 MHz Typ. -64 dBm @ MCS6 40 MHz Typ. -63 dBm @ MCS7 40 MHz Typ. -90 dBm @ MCS8 40 MHz Typ. -85 dBm @ MCS9 40 MHz Typ. -82 dBm @ MCS10 40 MHz Typ. -81 dBm @ MCS11 40 MHz Typ. -77 dBm @ MCS12 40 MHz Typ. -73 dBm @ MCS13 40 MHz Typ. -71 dBm @ MCS14 40 MHz Typ. -68 dBm @ MCS15 40 MHz Note: Due to a limitation in the receiver sensitivity performance for channels 153 and 161, it is recommended to avoid using these channels in your critical applications.
Receiver Sensitivity for 802.11b (measured at 2.437 GHz)	Typ. -93 dBm @ 1 Mbps Typ. -93 dBm @ 2 Mbps Typ. -93 dBm @ 5.5 Mbps Typ. -88 dBm @ 11 Mbps
Receiver Sensitivity for 802.11g (measured at 2.437 GHz)	Typ. -88 dBm @ 6 Mbps Typ. -86 dBm @ 9 Mbps Typ. -85 dBm @ 12 Mbps Typ. -85 dBm @ 18 Mbps Typ. -85 dBm @ 24 Mbps Typ. -82 dBm @ 36 Mbps Typ. -78 dBm @ 48 Mbps Typ. -74 dBm @ 54 Mbps
Receiver Sensitivity for 802.11n (2.4 GHz; measured at 2.437 GHz)	Typ. -89 dBm @ MCS0 20 MHz Typ. -85 dBm @ MCS1 20 MHz Typ. -85 dBm @ MCS2 20 MHz Typ. -82 dBm @ MCS3 20 MHz Typ. -78 dBm @ MCS4 20 MHz Typ. -74 dBm @ MCS5 20 MHz Typ. -72 dBm @ MCS6 20 MHz Typ. -70 dBm @ MCS7 20 MHz Typ. -95 dBm @ MCS8 20 MHz Typ. -90 dBm @ MCS9 20 MHz Typ. -87 dBm @ MCS10 20 MHz Typ. -83 dBm @ MCS11 20 MHz Typ. -80 dBm @ MCS12 20 MHz Typ. -74 dBm @ MCS13 20 MHz Typ. -71 dBm @ MCS14 20 MHz Typ. -69 dBm @ MCS15 20 MHz Typ. -87 dBm @ MCS0 40 MHz Typ. -83 dBm @ MCS1 40 MHz Typ. -83 dBm @ MCS2 40 MHz

	Typ. -80 dBm @ MCS3 40 MHz Typ. -76 dBm @ MCS4 40 MHz Typ. -73 dBm @ MCS5 40 MHz Typ. -69 dBm @ MCS6 40 MHz Typ. -67 dBm @ MCS7 40 MHz Typ. -93 dBm @ MCS8 40 MHz Typ. -88 dBm @ MCS9 40 MHz Typ. -85 dBm @ MCS10 40 MHz Typ. -82 dBm @ MCS11 40 MHz Typ. -78 dBm @ MCS12 40 MHz Typ. -73 dBm @ MCS13 40 MHz Typ. -69 dBm @ MCS14 40 MHz Typ. -67 dBm @ MCS15 40 MHz
Transmission Rate	802.11a/g: 6, 9, 12, 18, 24, 36, 48, 54 Mbps 802.11b: 1, 2, 5.5, 11 Mbps 802.11n HT20: 6.5 to 144.4 Mbps (MCS0 to MCS15) 802.11n HT40: 13.5 to 300 Mbps (MCS0 to MCS15)
Transmitter Power for 802.11a	23±1.5 dBm @ 6 Mbps 23±1.5 dBm @ 12 Mbps 23±1.5 dBm @ 24 Mbps 21±1.5 dBm @ 36 Mbps 20±1.5 dBm @ 48 Mbps 18±1.5 dBm @ 54 Mbps
Transmitter Power for 802.11n (5 GHz)	23±1.5 dBm @ MCS0 20 MHz 20±1.5 dBm @ MCS1 20 MHz 20±1.5 dBm @ MCS2 20 MHz 20±1.5 dBm @ MCS3 20 MHz 19±1.5 dBm @ MCS4 20 MHz 18±1.5 dBm @ MCS5 20 MHz 18±1.5 dBm @ MCS6 20 MHz 18±1.5 dBm @ MCS7 20 MHz 23±1.5 dBm @ MCS8 20 MHz 20±1.5 dBm @ MCS9 20 MHz 20±1.5 dBm @ MCS10 20 MHz 20±1.5 dBm @ MCS11 20 MHz 19±1.5 dBm @ MCS12 20 MHz 19±1.5 dBm @ MCS13 20 MHz 18±1.5 dBm @ MCS14 20 MHz 18±1.5 dBm @ MCS15 20 MHz 23±1.5 dBm @ MCS0 40 MHz 20±1.5 dBm @ MCS1 40 MHz 20±1.5 dBm @ MCS2 40 MHz 20±1.5 dBm @ MCS3 40 MHz 19±1.5 dBm @ MCS4 40 MHz 18±1.5 dBm @ MCS5 40 MHz 18±1.5 dBm @ MCS6 40 MHz 18±1.5 dBm @ MCS7 40 MHz 23±1.5 dBm @ MCS8 40 MHz 20±1.5 dBm @ MCS9 40 MHz 20±1.5 dBm @ MCS10 40 MHz 20±1.5 dBm @ MCS11 40 MHz 19±1.5 dBm @ MCS12 40 MHz 19±1.5 dBm @ MCS13 40 MHz 18±1.5 dBm @ MCS14 40 MHz 18±1.5 dBm @ MCS15 40 MHz
Transmitter Power for 802.11b	26±1.5 dBm @ 1 Mbps 26±1.5 dBm @ 2 Mbps 26±1.5 dBm @ 5.5 Mbps 25±1.5 dBm @ 11 Mbps
Transmitter Power for 802.11g	23±1.5 dBm @ 6 Mbps 23±1.5 dBm @ 12 Mbps 23±1.5 dBm @ 24 Mbps 21±1.5 dBm @ 36 Mbps 20±1.5 dBm @ 48 Mbps 18±1.5 dBm @ 54 Mbps
Transmitter Power for 802.11n (2.4 GHz)	23±1.5 dBm @ MCS0 20 MHz 21±1.5 dBm @ MCS1 20 MHz

	21±1.5 dBm @ MCS2 20 MHz 21±1.5 dBm @ MCS3 20 MHz 20±1.5 dBm @ MCS4 20 MHz 19±1.5 dBm @ MCS5 20 MHz 18±1.5 dBm @ MCS6 20 MHz 18±1.5 dBm @ MCS7 20 MHz 23±1.5 dBm @ MCS8 20 MHz 21±1.5 dBm @ MCS9 20 MHz 21±1.5 dBm @ MCS10 20 MHz 21±1.5 dBm @ MCS11 20 MHz 20±1.5 dBm @ MCS12 20 MHz 19±1.5 dBm @ MCS13 20 MHz 18±1.5 dBm @ MCS14 20 MHz 18±1.5 dBm @ MCS15 20 MHz 23±1.5 dBm @ MCS0 40 MHz 20±1.5 dBm @ MCS1 40 MHz 20±1.5 dBm @ MCS2 40 MHz 20±1.5 dBm @ MCS3 40 MHz 19±1.5 dBm @ MCS4 40 MHz 19±1.5 dBm @ MCS5 40 MHz 18±1.5 dBm @ MCS6 40 MHz 17±1.5 dBm @ MCS7 40 MHz 23±1.5 dBm @ MCS8 40 MHz 20±1.5 dBm @ MCS9 40 MHz 20±1.5 dBm @ MCS10 40 MHz 20±1.5 dBm @ MCS11 40 MHz 20±1.5 dBm @ MCS12 40 MHz 19±1.5 dBm @ MCS13 40 MHz 18±1.5 dBm @ MCS14 40 MHz 17±1.5 dBm @ MCS15 40 MHz
Wireless Security	WEP encryption (64-bit and 128-bit) WPA/WPA2-Enterprise (IEEE 802.1X/RADIUS, TKIP, AES) WPA/WPA2-Personal
WLAN Operation Mode	Access point
Antenna Connectors	5 x N-type female

Ethernet Interface

Standards	IEEE 802.1p for Class of Service IEEE 802.1Q for VLAN Tagging IEEE 802.3 for 10BaseT IEEE 802.3ab for 1000BaseT(X) IEEE 802.3af for PoE IEEE 802.3u for 100BaseT(X)
1000BaseSFP Slots	2
10/100BaseT(X) Ports (M12 D-coded 4-pin female connector)	4
Total Port Count	6

Ethernet Software Features

Management	SNMPv1/v2c/v3 DHCP Server/Client IPv4 Syslog TCP/IP Telnet TFTP UDP Web Console Wireless Search Utility
Routing	Port forwarding

Security	HTTPS/SSL RADIUS SSH				
Time Management	SNTP				
Firewall					
Filter	IP protocol MAC address Port-based				
USB Interface					
M12 Connector	M12 A-coded 5-pin female (for ABC-02 USB storage)				
Serial Interface					
Console Port	USB-M12 console (M12 B-coded 5-pin female connector)				
Parity	None, Even, Odd, Space, Mark				
LED Interface					
LED Indicators	PWR1, PWR2, FAULT1, FAULT2, STATUS, HEAD, TAIL, LAN1-LAN6, PoE1-PoE4, WLAN1, WLAN2				
Input/Output Interface					
Buttons	Reset button				
Power Parameters					
Input Current	AC input: 110 to 220 VAC, 50 to 60 Hz, 1.1 A (max.) DC input: 110 to 220 VDC, 1.1 A (max.)				
Input Voltage	110/220 VDC/VAC Redundant dual inputs				
Power Connector	M23 6-pin male connector				
Power Consumption	85 W (max.)				
	PSE/Voltage	110 VDC	110 VAC	220 VDC	220 VAC
	0 PSE port in use	17.4 W	16.2 W	17.6 W	17.5 W
	1 PSE port in use	34.15 W	32.6 W	33.8 W	33.55 W
	2 PSE ports in use	50.9 W	49 W	49.9 W	49.6 W
	3 PSE ports in use	67.65 W	65.4 W	66 W	65.65 W
	4 PSE ports in use	84.4 W	81.8 W	82.1 W	81.7 W
Reverse Polarity Protection	Supported				
Source of Input Power	PoE (IEEE 802.3af)				
Physical Characteristics					
Housing	Metal				
IP Rating	IP68				
Dimensions	324 x 279 x 156 mm (12.76 x 10.98 x 6.142 in)				
Weight	10,000 g (22.22 lb)				

Installation	Wall mounting DIN-rail mounting (with optional kit)
Protection	PCB conformal coating

Environmental Limits

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

Standards and Certifications

EMC	EN 61000-6-2/-6-4 EN 55032/24
EMI	CISPR 32, FCC Part 15B Class A
EMS	IEC 61000-4-2 ESD: Contact: 8 kV; Air: 15 kV IEC 61000-4-3 RS: 80 MHz to 1 GHz: 20 V/m IEC 61000-4-4 EFT: Power: 2 kV; Signal: 2 kV IEC 61000-4-5 Surge: Power: 2 kV; Signal: 2 kV IEC 61000-4-6 CS: 10 V IEC 61000-4-8 PFMF
Safety	EN 60950-1 UL 60950-1 IEC 60950-1
Cybersecurity	EN 18031-1
Radio	FCC MIC IC WPC RED
Railway	EN 50121-4 EN 50155
Railway Fire Protection	EN 45545-2

MTBF

Time	290,937 hrs
Standards	Telcordia Standard SR-332

Warranty

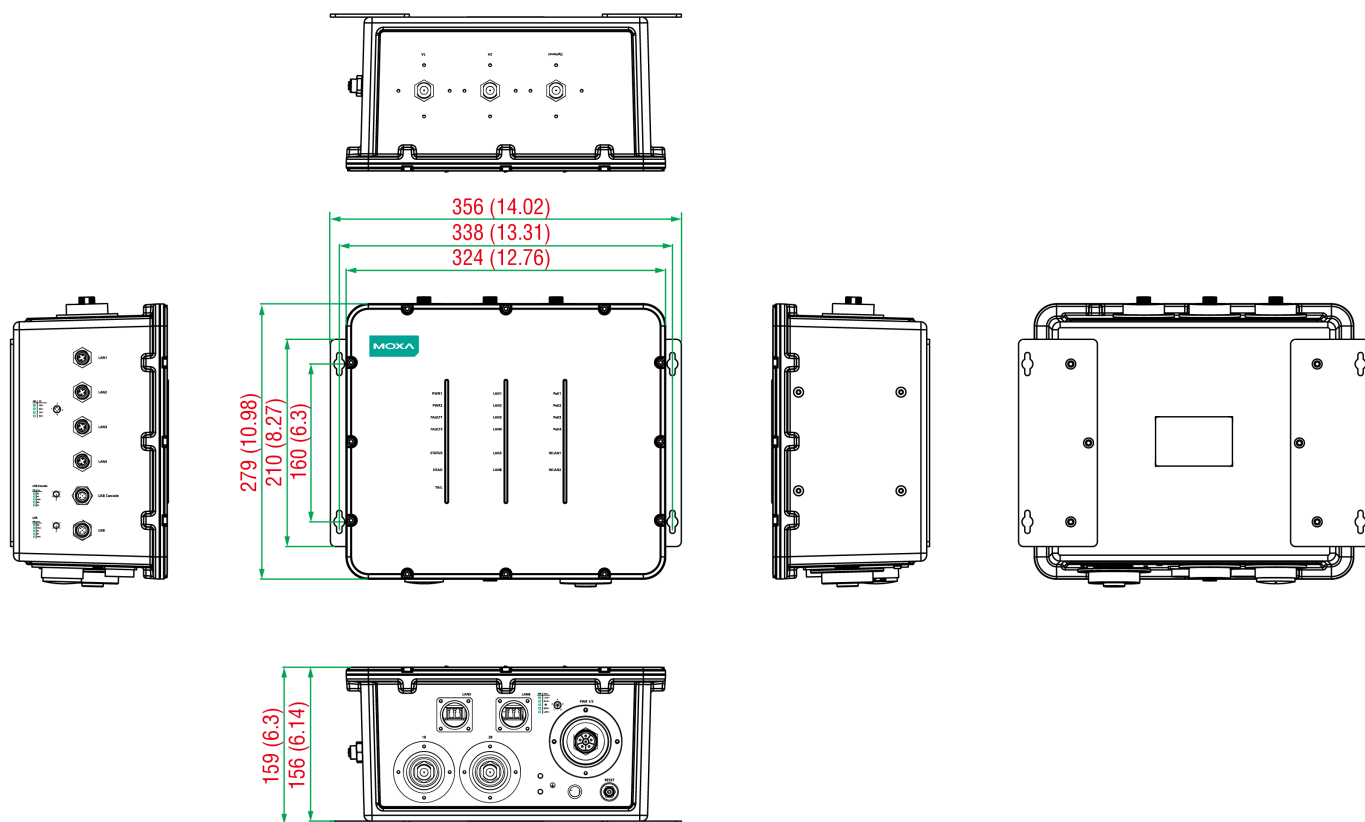
Warranty Period	5 years
Details	See www.moxa.com/jp/warranty

Package Contents

Device	1 x TAP-323 Series wireless access point
Installation Kit	1 x cap, metal, for ABC-02 USB storage port 1 x cap, metal, for USB console port 1 x metal M23 male 6-pin crimp 1 x plastic M23 dust cover for power 1 x fiber panel mounting kit 1 x wall-mounting kit 3 x antenna glands for top side antenna 4 x cap, metal, for LAN port 5 x metal protective caps for 4 antenna ports and 1 optional antenna port
Documentation	1 x quick installation guide 1 x warranty card

寸法

単位：mm（インチ）



注文情報

Model Name	Band	Standard	Application	Operating Temp.	Indoor/Outdoor, IP Rating	Single/Dual RF
TAP-323-EU-CT-T	EU	802.11a/b/g/n	Railway trackside wireless access point	-40 to 75°C	Outdoor, IP68	Dual RF
TAP-323-US-CT-T	US	802.11a/b/g/n	Railway trackside wireless access point	-40 to 75°C	Outdoor, IP68	Dual RF
TAP-323-JP-CT-T	JP	802.11a/b/g/n	Railway trackside wireless access point	-40 to 75°C	Outdoor, IP68	Dual RF

アクセサリ（別売）

Communication Modules

SFP-1FELLC-T	SFP module with 1 100Base single-mode with LC connector for 80 km transmission, -40 to 85°C operating temperature
SFP-1GLSXLC-T	SFP module with 1 1000BaseLSX port with LC connector for 1km/2km transmission, -40 to 85°C operating temperature
SFP-1FEMLC-T	SFP module with 1 100Base multi-mode, LC connector for 2/4 km transmission, -40 to 85°C operating temperature
SFP-1GLHXLCT	SFP module with 1 1000BaseLHX port with LC connector for 40 km transmission, -40 to 85°C operating temperature
SFP-1GSXLC-T	SFP module with 1 1000BaseSX port with LC connector for 300m/550m transmission, -40 to 85°C operating temperature
SFP-1GLHLCT	SFP module with 1 1000BaseLH port with LC connector for 30 km transmission, -40 to 85°C operating temperature
SFP-1FESLC-T	SFP module with 1 100Base single-mode with LC connector for 40 km transmission, -40 to 85°C operating temperature
SFP-1GLXLCT	SFP module with 1 1000BaseLX port with LC connector for 10 km transmission, -40 to 85°C operating temperature

M12 Connector Caps

A-CAP-M12F-M	Metal cap for M12 female connector
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Connectors

M12D-4P-IP68	M12 D-coded screw-in sensor connector, male, IP68
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Cables

CBL-M12D(MM4P)/RJ45-100 IP67	M12-to-RJ45 cable, IP67-rated, 1 m
CBL-M23(FF6P)/OPEN-BK-100 IP67	M23 to 6-pin power cable, IP67-rated female 6-pin M23 connector, IP67, 1 m

Storage Kits

ABC-02-USB	Configuration backup and restoration tool, firmware upgrade, and log file storage tool for managed Ethernet switches and routers, 0 to 60°C operating temperature
ABC-02-USB-T	Configuration backup and restoration tool, firmware upgrade, and log file storage tool for managed Ethernet switches and routers, -40 to 75°C operating temperature

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