

### Introduction

The Teldat APR222ac Access Point is especially designed for WLAN applications in railway environments. In order to provide on-board Wi-Fi connectivity, the APR222ac can be installed in high-speed and freight trains, trams, etc., and complies with the railway regulations (including EN 50155). Furthermore, its two radio modules offer simultaneous dual band Wi-Fi connectivity. It is a flexible device that can be integrated in cloud and HotSpot management platforms, in addition to offering a wide variety of features.

### Product Highlights

- ▶ WLAN access for passengers and staff
- ▶ Extended temperature range -25 °C to +70 °C
- ▶ Two 2.4/5 GHz radio modules
- ▶ Two M-12 Gb Ethernet LAN ports
- ▶ WLAN controller 5+1 APs in Master-AP mode
- ▶ Multi-SSID support (up to 16 per radio), 32 VLAN
- ▶ Railway environment certificate

### Interfaces

2 x 10/100/1000 Mbps LAN interfaces	Autosensing, auto MDI/MDIX
2 x radio modules, 2x2 MIMO	2 x 802.11ac Wi-Fi modules
4 type-N antenna connectors	Resistant to excessive vibration

### Teldat APR222ac

### Competitive Advantage

Access point for railway environments	The Teldat APR222ac is a suitable access point for railway environments, which offers professional connectivity carrying services to clients on different bands.
Professional Wi-Fi technology	It supports airtime fairness, band steering, IAPP roaming (802.11f), 802.11e WMM, and bandwidth limitation per-SSID and per user.
Simple, efficient administration	Web configuration (http/https), Telnet, SSH, SNMP, CAPWAP support from WLC in Teldat router, Dime Manager (up to 50 devices), CNM.
Wireless LAN controller included	In Master-AP mode, you can manage and configure up to 5 additional Access Points.

# Scenarios

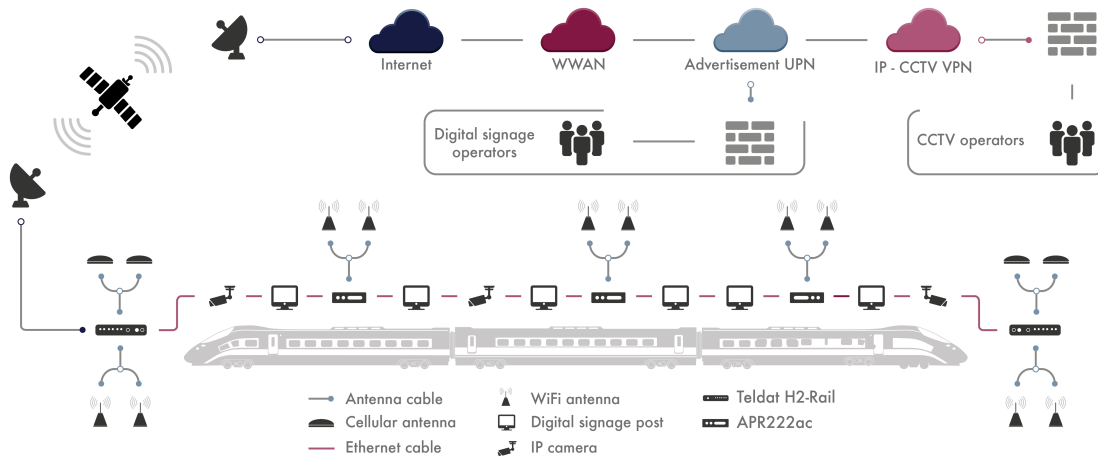


Figure: Connected train: New railway transport paradigm

## Key Features

**Two 802.11ac MIMO 2x2 Wi-Fi radio modules** Two 802.11ac 2.4/5 GHz radio modules with 2x2 MIMO make it possible for the device to provide connectivity to terminals that operate on both frequency bands.

**Client limiting and Band Steering** You can set a threshold for the maximum number of connected clients. When this threshold is reached, clients are diverted to neighboring APs or to the 5 GHz band, which is usually less congested.

**Security through ACLs/802.11i/WIDS and WIPS** Malicious clients and APs that are included on a dynamic blacklist are reported to the WLAN Controller or CNM.

**Use of 20/40 MHz channels** It can combine two 20 MHz channels to form a 40 MHz channel, thus doubling the transfer rate, and an optimal configuration of the short guard interval will provide a fourfold increase in the available bandwidth.

**Hardware design for railways** Designed to withstand high vibration and extreme temperatures (-25 °C a 70 °C). It has full onboard train certifications (including EN 50155, EN 45545-2, EN 50121-3-2).

**SSID and VLAN traffic separation** It supports up to 16 SSID per radio module and up to 32 VLAN (802.1q). You can assign one VLAN per SSID to differentiate network traffic.

**Autonomous, controlled or master operating mode** Includes multiple operating modes such as WLAN access point: autonomous (access point, client and bridge), controlled and master (up to 5 additional APs).

**Event and alert notifications** The device sends information with different levels of security through Syslog client, SNMP traps and e-mail alerts.

**Network (neighboring) and client monitoring** In-depth monitoring of the radio interface: SSIDs, connected clients, signal/noise, transfer rate, Rx/Tx packets.

**Configuration and deployment with minimum IT resources** Auto-configuration from a Teldat router (WLC9 or Colibri NetManager). This reduces the risk of configuration errors in large-scale deployments as pre-validated templates are used.

## HARDWARE TECHNICAL FEATURES

### Interfaces and connectors

LAN: 2x10/100/1000 Mbps, auto MDI/MDIX, M12 connector (8-pole, X-coded)

Wi-Fi: 2 x 802.11ac modules (2.4/5 GHz), MIMO 2x2

M-12 (D-encrypted ,4 poles) power connector. Type-N antenna connectors

### Antennas

2 x female N-type external antennas connectors by radio module

4 x antenna connectors in total

### Power

110 or 24 VDC power supply

M-12 connector (4-poles, A-coded)

Max. consumption: 20 W

### Dimensions and casing

Approx.: 21 cm x 21 cm x 4 cm (Width x Length x Height)

Metal casing. Can be wall mounted or installed on desktop

Weight (aprox.): 2.6 Kg.

### Environmental specifications

Operating temperature range: -25 °C to 75 °C

Relative humidity: up to 95%

## SOFTWARE TECHNICAL FEATURES

### Wi-Fi interface

Beamforming, short guard interval, adjustable DTIM, Maximum Ratio combining

Multi-SSID: up to 16 per radio, each with a MAC address

SSID broadcasting, allowed/blocked

### Wi-Fi security and authentication

Open, WEP64/128, WPA Personal/Enterprise, WPA2

Personal/Enterprise

802.1x/EAP-MD5, 802.1x/EAP-TLS, 802.1x/EAP-TTLS, 802.1x/EAP-PEAP

Key management, PSK/TKIP encryption, AES encryption, 802.x/EAP

### Management/administration

HTTP/HTTPS, Telnet, SSH, Dime Manager, CNM

SNMP (v1, v2, v3), SNMP traps (v1, v2, v3) conf., SNMP IP access list conf.

Configuration backup/restoration

### Supervision

Syslog client with different message severity levels

Emission of alarms by e-mail

Programming reset, interface activation/deactivation, SSIDs, etc.

### Wi-Fi optimization

Airtime fairness, load balancing, IAPP roaming(802.11f)

Client limitation, data rate trimming

WMM 802.11e power save

### Detection mechanisms

MAC filtering (static and dynamic blacklist )

WIDS: rogue AP, neighbour AP and client detection

WIPS: rogue client protection

### Operating modes

WLAN managed AP

WLAN Master AP (it manages up to 5 additional APs)

WLAN Standalone (AP, client and bridge)

### VLANs

VLAN configuration according IEEE 802.1q

Up to 32 VLANs

## ADDITIONAL TECHNICAL FEATURES

### Other functionalities

NTP Client, NTP Server, manual configuration

DNS Client, DNS Server, DNS Relay

DHCP Client, DHCP Server, DHCP Relay

### CE and Railway certifications

CE: EN 60950; EN 300328; EN 301489-1; EN 301489-17; EN 301893; EN 62311

Railway: EN 50155; EN 50121-3-2; EN 61373; EN 60068-2-1; EN 60068-2-2

EN 60068-2-27; EN 60068-2-30; EN 60068-2-47;EN 60068-2-64; EN 60068-3-1

### Other functionalities (2)

Discovery protocol: CAPWAP (DHCP option RFC1517)

Configurable roaming (off, slow, normal, fast, custom)

# FLEXIBLE COMMUNICATIONS SOLUTIONS THAT GROW WITH YOU.

## Teldat APR222ac

Railway Access Point for WiFi services on all trains



**Teldat is a leading provider in Enterprise Communications equipment and Services for the top corporate to mid-sized and SME markets.**

### About TELDAT



**ROUTERS | Wi-Fi | MANAGEMENT | TRANSPORT | SMART GRID | INDUSTRIAL | VoIP | CLOUD | SECURITY | NFV |**

Teldat Group is a leading technology holding that designs, manufactures and distributes advanced Internetworking platforms for corporate environments, providing new and cutting-edge communication solutions without ever losing sight of its customers real requirements. Teldat's solutions development is based on proprietary technology, which is in the Group's DNA. This allows Teldat to be a leading provider in Enterprise Communications equipment and Services for the top corporate to midsized markets, as well as the SME and SoHo markets.

From a geographical viewpoint, Teldat Group has a presence in all continents, with its corporate headquarters located in Spain, and operational affiliates in Europe (Germany, Austria, Portugal, Italy and France) and in LATAM (Mexico and Brazil), as well as two business development offices in USA and China.



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