Data Sheet

ADTRAN

810-RG

Wireless Ethernet Residential Gateway

SDX Series

Benefits

- **Optimized for multi-user homes via MU-MIMO technology**
- **Leverages Enterprise-class Wi-Fi functionality with DynamicRF, Dynamic Steering, Dynamic Airtime, Dynamic Mesh, and Dynamic Mobility**
- **Supports Gigabit Broadband over Wi-Fi**
- **Greatly improves network performance with flexible concurrent dual-band Wi-Fi**
- **Supports self-forming and healing mesh technology**
- **Leverages Artificial Intelligence (AI)/ Machine Learning (ML) for Radio Resource Management (RRM) and band/client steering**
- **USB 3.0 interface for external devices**
- **IPTV ready with wireless video distribution**
- **Supports zero-touch deployment that allows for self-installation**
- **Supports remote troubleshooting and home Wi-Fi management via Mosaic Device Manager**
- **Offers extended Wi-Fi coverage with optional ADTRAN SDX 810 Mesh APs**
- **Compatible with multiple access architectures**
- **Automatically provides security updates and parental controls**

Overview

Wi-Fi device access has become an absolute requirement in today's homes and businesses. Smartphones, tablets, streaming devices, and Wi-Fi-enabled smart-home devices are placing a tremendous strain on the home network. In addition, the emergence of Gigabit broadband offerings have exposed Wi-Fi as a potential bottleneck for delivering advertised speeds down to the device. This requires service providers to rethink how they deliver residential connectivity over a wireless network as they look to minimize operational costs while ensuring higher customer satisfaction.

The Solution

The ADTRAN 810-RG Wireless Ethernet Residential Gateway is an integrated dual band wireless router and gateway with 802.11ac Wave 2 4x4 MU-MIMO implementation. It is designed to deliver near Gigabit throughput and the extended coverage to make the fully wireless home a reality.

Better 802.11ac Performance with Beamforming

The ADTRAN 810-RG Wireless Ethernet Residential Gate¬way incorporates MU-MIMO with beamforming technology to deliver dramatic improvement in Wi-Fi 802.11ac/n performance, reliability, range and coverage. MU-MIMO supports four simultaneous data streams and beamforming makes it possible to steer these datastreams in the direction of associated clients, ensuring dedicated bandwidth to the wireless devices while simultaneously avoiding interference.

Enhanced Multi-user HDTV Quality over Wireless

The ADTRAN 810-RG includes built-in 802.11ac 4x4 antennas with Multi-User Multiple Input Multiple Output (MU-MIMO) to deliver wired equivalent performance, including full HDTV quality with 1080p video resolution. It simultaneously delivers up to four flawless High-Definition (HD) video streams at more than 100 Mbps data rates, over 100 feet, and guarantees this performance nearly 100 percent of the time through near-zero Packet Error Rate (PER) data transfers, regardless of signal impairment and dead zones that are typical in the home.

ADTRAN 810-RG

Game-changing Operational Savings

The ADTRAN Mosaic™ Subscriber Experience Suite, inclusive of the ADTRAN 810-RG, drastically reduces the time and labor required to install, provision and initiate billing for a new service. This comes from the eliminated home wiring due to the wireless feature set of the 810-RG and from the simplified and automated provisioning through ADTRAN Mosaic Device Manager. A single technician simply plugs the wireless Ethernet residential gateway into an ONT or DSL modem and their IP device will be taken directly to the ADTRAN Mosaic Activate portal. Here they can choose their service options which then automatically provisions the service from the ADTRAN Mosaic Device Manager, via TR-069, and initiates the billing cycle.

Deployments Made Simple—Self-Healing Wi-Fi

Auto Provision, Auto Configure, Auto Optimize – Uses extensive, proven, dynamic enterprise-class technologies that dramatically improve residential Wi-Fi user experience

- Zero-touch Deployment: RGs automatically discover, download firmware and download configuration.
- DynamicRF Radio Resource Management (RRM)/Self Organizing Network (SON) technology: Automatically configures channels and transmit power settings based on RF environment and shuffles as necessary
- Dynamic Steering: Band/client steering, load balancing and sticky client prevention technology matches clients with the best radio in the best RG/Mesh AP to provide the client with the best possible quality of experience.
- Dynamic Airtime: Airtime Fairness prevents slow legacy clients (802.11a,b,g,n) from bogging down the network
- Dynamic Mesh: Forms with the touch of a button or simply plugging the Mesh AP into the LAN port of the RG temporarily and automatically configures the mesh and syncs configuration going forward. Leverages DynamicRF to choose the best channel for the mesh.
- Dynamic Mobility: Continuous mobility and roaming throughout the home

Unmatched Visibility and Insight

Cloud management via the Mosaic Device Manager allows you to view, manage and optimize the Wi-Fi network from any device—anytime.

- Reporting and analytics dashboards provide real-time and historical business insight into the network.
- Network Mapping provides a deeper look into connected Wi-Fi and LAN devices.
- Configuration Overviews offer valuable information about device-specific settings
- Automatic updates pushed from the cloud for added security

SDN Enabled

The ADTRAN SDX Series of next-generation programmable network elements offers open, programmable APIs that natively integrate into any leading open-source SDN control and orchestration system. ADTRAN SDX Series solutions span from cloud edge to subscriber edge, expediting the deployment of fully automated, Web-scale networks. Taking datacenter principles like SDN and NFV and applying them to the service providers' networks are a necessity to compete against the threat of cloud solution providers. ADTRAN is enabling this capability in current and next-generation platforms so service providers are prepared when they need to take the next step in their network. ADTRAN RGs are uniquely positioned to perform gateway functions in the network element today but shift virtualized RG functions to the cloud as the service provider network evolves.

Product Specifications

Ethernet Interfaces

- 10/100/1000Base-T Interface with RJ-45 Connectors
- Ethernet Port Auto Negotiation or Manual Configuration
- MDI/MDIX Automatically Sense

Ethernet Services

- Symmetric 1 Gbps Throughput
- 802.1D Bridging
- 802.1x Authentication
- Virtual Switch Based on 802.1q VLAN
- VLAN Tagging/Detagging Per Ethernet Port
- IP ToS/DSCP to 802.1p Mapping
- Quality of Service (QoS)
  - VLAN-ID
  - 802.1p bit
  - DSCP to p Bit Translation
- IGMP v2/v3 Snooping
- Broadcast/Multicast Rate Limiting

Gateway Features

- WAN Connection
  - Point-to-Point Protocol over Ethernet (PPPoE)
  - Dynamic Host Configuration Protocol (DHCP)
  - Static
- DHCP Server for LAN Devices
- DNS Relay
- Network Address Translation (NAT)/Network Address Port Translation (NAPT)
- Port Forwarding
- Static Routing
- Access Control List (ACL)
- VPN Pass Thru for Point to Point Tunneling Protocol (PPTP), Layer 2 Tunneling Protocol (L2TP) and IP Security Protocol (IPSec)
- Firewall
- Parental Control (Internet Access Scheduling)
- Application Layer Gateway (ALG)
- Demilitarised Zone (DMZ)
- Dynamic Domain Name Server (DDNS)
- Network Time Protocol (NTP)
- Universal Plug and Play (uPnP)
- IGMP Proxy
- IPv6
  - Stateless Address Autoconfiguration (SLAAC)
  - DHCPv6
  - PPPoEv6
  - DNSv6

WLAN Interface

- Compliant with IEEE 802.11 b/g/n/ac
- 2.4 GHz and 5.0 GHz
  - Data rate 5.0 GHz: 1.733 Gbps
  - Data rate 2.5 GHz: 300 Mps
- MIMO 4x4
- Dual Band Radios
  - 2.4 GHz 2x2
  - 802.11 b/g/n
  - 5.0 GHz 4x4
  - 802.11 n/ac
- 4x SSIDs per Radio
- 64 and 128 Bit Wireless Encryption Protocol (WEP) Support
- Push Button WPS
- Beamforming
- A-MPDU and A-MSDU Frame Aggregation
- HT20, HT40 (High-throughput) and VHT80 (Very high-throughput)
- Wi-Fi Mesh using SDX810-APs

USB Interface

- 1 USB Host Interface
- Compliant to USB 3.0
- Network Storage
- Print Server

POTs Interface (supported in future release)

- RJ-11 Interface
- 3-REN, 50V RMS
- **VoIP Voice:** SIP
- **TDM Voice:** Both GR.303, GR-57 and TR-08
- Full CLASS Feature Set
- Both ANSI and ETSI POTS
- Configurable Dial Plan
- Configurable Country Specific Ring-back Tones (Frequency and Cadence)
- DHCP Client or Static IP Configuration
- Optionally Metallic Loop Testing

Dimensions

- 5.00” X 5.00” X 1.50”

Power Supply

- 12V (Feed via External AC/DC Adapter)
- Power Switch
- **Power Consumption:** 24W

ADTRAN 810-RG

Working Environment

- **Temperature:** 32°F - 113°F (0°C - +45°C)
- **Humidity:** 5% - 95% (non-condensing)

Safety and EMI

- FCC Part 15 Class B
- UL/CSA 60950-1 Listed

Environmental Directive

- RoHS 2011/65/EU

LEDs

- Power
- WAN
- LAN
- VoIP
- Internet
- USB
- Wireless (Touch-sensitive)
- WPS (Touch-sensitive)

Ordering Information

Equipment	Part No.
ADTRAN SDX 810-RG, Wireless Ethernet Residential Gateway	1287850F1

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