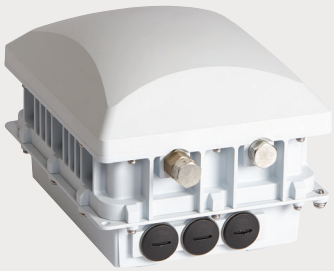
ZoneFlex 7781-CM

Strand-Mounted 802.11n 3x3:3 Outdoor Access Points with Integrated Cable Modem

Ruckus™ Simply Better Wireless.

DATA SHEET



BENEFITS

INTEGRATED DOCSIS 3.0 MODEM WITH 8 X 4 BONDED CHANNELS

Environmentally hardened enclosure with DOCSIS 3.0 certified modem providing bonded 8 downstream and 4 upstream channels

UNPRECEDENTED OUTDOOR WI-FI PERFORMANCE

Advanced, Smart Wi-Fi design with concurrent 802.11n 3x3:3 dual-band radios supporting up to 512 client devices

UNIFIED, CENTRALIZED WI-FI MANAGEMENT EASES ADMINISTRATION

SCG 200 or ZoneDirector provide a detailed view into and control over both indoor and outdoor Smart Wi-Fi APs enabling seamless and system-wide administration of the entire wireless environment

UNMATCHED WI-FI RANGE AND RELIABILITY

Adaptive antenna technology combined with unique interference mitigation technology delivers up to an additional 6dB of BeamFlex+ gain in addition to the physical antenna gain to maximize capacity and coverage

OPTIMIZED FOR MOBILE DEVICES

Polarization Diversity with Maximal-Ratio Combining (PD-MRC) combines signals with different polarities for best reception no matter the orientation of the mobile devices

CHANNEL SELECTION OPTIMIZES THROUGHPUT

ChannelFly dynamic channel management, based on throughput measurements, not just interference, chooses the best channel to give users the highest throughput.

PROVEN SUPPORT FOR IP-BASED VOICE AND VIDEO OVER WI-FI

A dynamic directional antenna and expert QoS software optimize delay-sensitive, IP video and high-density voice over Wi-Fi (VoWLAN) applications and PoE output allows connecting other devices such as an IP camera

STRAND-MOUNTED 802.11N SMART WI-FI ACCESS POINT WITH BEAMFLEX+ ADAPTIVE ANTENNA AND INTEGRATED CABLE MODEM

The Ruckus ZoneFlex 7781-CM is a purpose-built strand mounted access point that combines dual-band 802.11n with an integrated cable modem. With patented adaptive antenna technology, the 7781-CM delivers unprecedented range and reliability for multiple system cable operators (MSOs)

The Ruckus 7781-CM is lightweight and can be easily installed and integrated with the cable operator's network. It leverages existing cable assets, including mounting, power, backhaul and customer service systems to quickly and easily extend wireless services to cable operators' customers.

The ZoneFlex 7781-CM implements Ruckus-patented BeamFlex+™ adaptive antenna technology that enables consistent, extended coverage and multimedia support. Network operators can create different quality of service for various WLANs to provide tiered services or data offload solutions. Available with an omnidirectional antenna, the 7781-CM can provide reliable data access in a multitude of high density environments.

With a separate monitoring radio sensor, the 7781-CM can perform real time spectrum analysis with no packet loss. Further, the GPS capability of the 7781-CM can automatically establish the exact location of the access point on a network map.

The Ruckus ZoneFlex 7781-CM is ideal for MSOs expanding branded broadband services through their cable infrastructure to provide hotspot services to neighborhoods, resorts, train stations, and other public locations. The 7781-CM delivers broadband services outdoors to extend managed wireless LANs (WLANs) for strand mounted locations and where Ethernet cabling is not feasible.

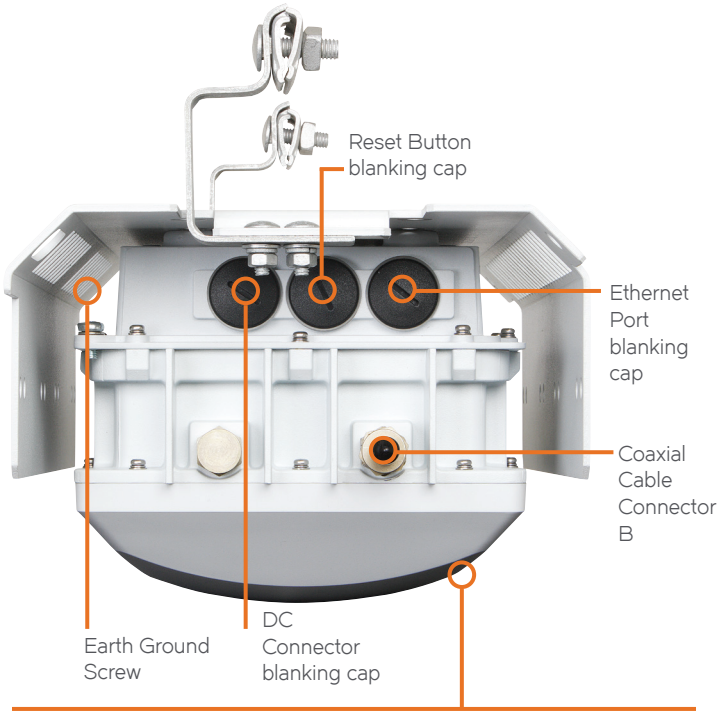
The ZoneFlex 7781-CM can be centrally managed by the SmallCell™ Gateway 200 (SCG 200) or via the ZoneDirector Smart WLAN controller.

© 2016 RUCKUS WIRELESS, INC. COMPANY PROPRIETARY INFORMATION

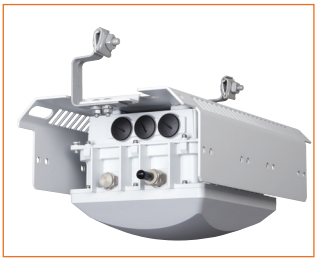
ZoneFlex 7781-CM

Strand-Mounted 802.11n 3x3:3 Outdoor Access Points with Integrated Cable Modem

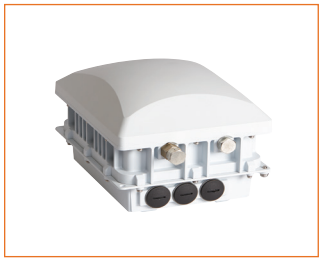
DATA SHEET



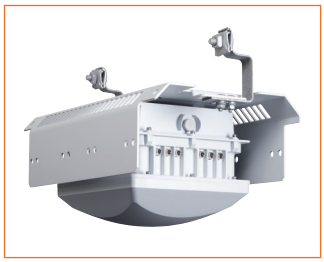
A patented adaptive antenna array integrates high-gain vertically-polarized and horizontally-polarized antenna elements. With BeamFlex+, this enables over 2,000 potential antenna combinations and up to an additional 6dB BeamFlex+ gain on top of the physical antenna gain, thereby delivering unprecedented range extension and signal reliability.



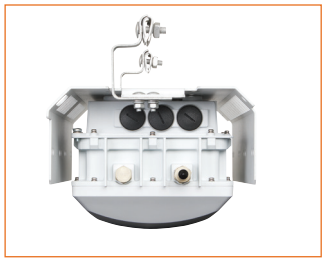
Lightweight for ease of installation. Environmentally hardened outdoor enclosure



Bare unit for mounting on pedestal, pole, or wall with accessory bracket



Internal 2.4/5GHz BeamFlex Adaptive Antenna



Integrated DOCSIS 3.0 cable modem leverages existing MSO cable plant

FEATURES

- 3x3: 3 streams concurrent dual-band (2.4GHz/5GHz) operation
- Adaptive antenna technology and advanced RF management
- Automatic interference mitigation, optimized for high-density environments
- Up to 9dB added signal gain (Rx and Tx combined) / 15dB interference mitigation
- Polarization diversity for ideal mobile device performance
- Standard 15.4W PoE output, for powering IP surveillance camera, small cell, or fiber interface
- Flexible mounting: strand, pedestal, pole, facade
- Extended temperature range (-40°C to 65°C)
- Powered by cable infrastructure
- Integrated GPS for location based services
- Continuous spectrum analysis
- Advanced QoS packet classification and automatic priority for latency sensitive traffic
- WPA-PSK (AES), 802.1X support
- Flexible tunneling
- Band steering, band balancing
- Airtime fairness
- Integrated DOCSIS 3.0 / EuroDOCSIS / JCTEA (JapanDOCSIS) cable modem with 8x4 channel bonding
- Dynamic channel management remote monitoring and network management
- Application recognition and control

REMOTE MONITORING AND NETWORK MANAGEMENT

- The Ruckus 7781-CM can be managed using either the Ruckus SCG 200, FlexMaster management platform and/or the Service Provider's own Cable Management system to take advantage of the best of both worlds in terms of cable network management and wireless monitoring.
- The integrated management approach provides complete network-wide support for Fault, Configuration, and Performance Management. Patent pending software algorithm allows the Ruckus 7781-CM to be remotely controlled from either the Cable MSO management system or from the wireless mesh interface in the case of temporary network interruptions, thereby avoiding expensive and inefficient truck rolls.

© 2016 RUCKUS WIRELESS, INC. COMPANY PROPRIETARY INFORMATION

ZoneFlex 7781-CM

Strand-Mounted 802.11n 3x3:3 Outdoor Access Points with Integrated Cable Modem

DATA SHEET

PHYSICAL CHARACTERISTICS	
Power	• Power over cable (40-90 VAC quasi-square wave 47-63Hz) through common 5/8" hardline or F connector
Operating Temperature*	• -40°C to +65°C (-US01/WW01/JP21) • -10°C to +65°C (WW11)
Physical Size	• With strand-mount: 41.4cm x 23.9cm x 23.1cm (16.3 in x 9.4 in x 9.1 in) • No hangar: 26.6cm x 19.5cm x 16.8cm (10.5 in x 7.7 in x 6.6 in)
Weight	• With strand-mount: 5.65 Kg (12.5 lbs) • Bare unit: 4.00 Kg (8.8 lbs)
Ethernet Ports	PoE Output: • 10/100/1000Base-T 802.3,802.3u, 802.3ab, 802.3 PoE PSE Output up to 15.4W • Jumbo frame support (2000 byte max)
Power Consumption	PoE AC Input (PoE Output Off/Heater-Off): • Idle: 21W • Typical: 24W • Peak: 34W PoE AC Input (PoE Output Off/Heater-On): • Idle: 32W • Typical: 35W • Peak: 44W PoE AC Input (PoE Output 15.4W/Heater-On): • Idle: 56W • Typical: 59W • Peak: 69W (PoE output 15.4W)

* 901-7781-WW11 no-heater installed: Operating temp -10°C to +65°C

PERFORMANCE AND CAPACITY	
Concurrent Stations	• 512
Simultaneous VoIP Clients	• 30

RF	
Antenna	• 2000+ patterns
Physical antenna gain	• 3dBi both 2.4/5GHz bands
Beamflex* SINR TX gain	• 6dB
Beamflex* SINR RX gain	• 4dB (PD-MRC)
Interference mitigation	• 15dB
Minimum rx sensitivity	• -100dBm (2.4GHz); -98dBm (5GHz)

*BeamFlex gains are statistical system level effects translated to enhanced SINR based on observations over time in real-world conditions with multiple APs and many client
** Rx sensitivity varies by band, channel width, and MCS rate

MANAGEMENT	
Deployment options	• Managed by ZoneDirector • Supported by FlexMaster • Managed by SmartCell™ Gateway (SCG 200)
Configuration	• Web User Interface (HTTP/S) • CLI (Telnet/SSH), SNMP v1, 2, 3 • TR-069 vis FlexMaster

WI-FI	
Standards	• IEEE 802.11a/b/g/n • 2.4GHz and 5GHz concurrent operation
Radio Chains	• 3 x 3: 3
Frequency Band	• IEEE 802.11n: 2.4 – 2.484 GHz and 5.15 – 5.85 GHz • IEEE 802.11a: 5.15 – 5.875 GHz • IEEE 802.11g: 2.4 – 2.484 GHz
BSSID	• 32 per radio (64 per AP)**
Advanced Radio Features	• BeamFlex+ Adaptive Antenna Technology • TxBF, LDPC, PD-MRC, and ML receiver • GPS • Continuous Spectrum Analysis
Wireless security	• WPA-PSK, WPA-TKIP, WPA2 AES, 802.11i • Authentication via 802.1X, local authentication database, support for RADIUS and ActiveDirectory

* Maximum power varies by country
**With 9.6 release

CABLE MODEM SPECIFICATIONS	
Standard	• DOCSIS 3.0 with 8 x 4 bonding • EuroDOCSIS • JCTEA STD-005 (Japan)
Cable modem throughput	• 304/108 Mbps (DOCSIS 3.0, JCTEA) • 400/108 Mbps (EuroDOCSIS)
Protection circuits	• IEEE C62.41-1991 • GR1089 – 6 kV (3000 A) surge

PRODUCT ORDERING INFORMATION

MODEL	DESCRIPTION
ZoneFlex 7781-CM Outdoor Access Points	
901-7781-US01	ZoneFlex 7781-CM concurrent dual-band 3x3:3 802.11n outdoor wireless access point with 360 degree BeamFlex+ 2.4GHz/5GHz antennas and integrated cable modem (DOCSIS 3.0). Includes strand-mount bracket. US country code.
901-7781-WW01	ZoneFlex 7781-CM concurrent dual-band 3x3:3 802.11n outdoor wireless access point with 360 degree BeamFlex+ 2.4GHz/5GHz antennas and integrated cable modem (DOCSIS 3.0). Includes strand-mount bracket.
901-7781-WW11	ZoneFlex 7781-CM concurrent dual-band 3x3:3 802.11n outdoor wireless access point with 360 degree Beamflex 2.4GHz/5GHz antennas and integrated cable modem (EuroDOCSIS). Mounting bracket not included.
901-7781-JP21	ZoneFlex 7781-CM concurrent dual-band 3x3:3 802.11n outdoor wireless access point with 360 degree BeamFlex+ 2.4GHz/5GHz antennas and integrated cable modem (JCTEA STD-005). Includes strand-mount bracket.
Optional Accessories	
902-0182-0003	Outdoor Mounting Bracket, Bare Metal, Any-Angle. For pole or wall mounting.
903-0183-0000	Spare data connector; weatherizing data cable gland.

*7781-CM is only sold through authorized resellers

Copyright © 2016, Ruckus Wireless, Inc. All rights reserved. Ruckus Wireless and Ruckus Wireless design are registered in the U.S. Patent and Trademark Office. Ruckus Wireless, the Ruckus Wireless logo, BeamFlex+, ZoneFlex, MediaFlex, FlexMaster, ZoneDirector, SpeedFlex, SmartCast, SmartCell, ChannelFly and Dynamic PSK are trademarks of Ruckus Wireless, Inc. in the United States and other countries. All other trademarks mentioned in this document or website are the property of their respective owners.
16-10-A

Ruckus™ Simply Better Wireless.

Ruckus Wireless, Inc. | 350 West Java Drive | Sunnyvale, CA 94089 USA | T: (650) 265-4200 | F: (408) 738-2065
ruckuswireless.com