3Com® 54 Mbps Wireless LAN Building-to-Building Bridge Family

DATA SHEET

Secure and reliable wireless connections that extend the network without costly cabling or leased-line charges

OVERVIEW

The 3Com® 54 Mbps Wireless LAN Building-to-Building Bridge family provides IEEE 802.11a and 802.11g Wi-Fi connections and bridged links across building complexes, enterprise campuses and metropolitan areas. Wireless outdoor bridges can connect intra-building LANs which are up to 10 miles (17 kilometers) apart, while 802.11g indoor bridges enable network connections between adjacent buildings and out to open areas such as atriums and storage yards. In addition, the 3Com 11a 54 Mbps Wireless LAN Outdoor Building-to-Building Bridge and 11b/g Access Point combines the functions of a bridge and a full-featured wireless access point in one durable weatherproof unit.

By installing 3Com building-to-building bridges, enterprises can avoid the expense of extending their cabling plant between buildings or using expensive leased lines with recurring monthly service fees. Rugged design and multiple security features help ensure continuous, reliable and secure operation. Several antenna options are available for the indoor bridges and the outdoor bridge/access point.

KEY BENEFITS

NETWORK CONNECTIONS EVERYWHERE

3Com building-to-building bridges let users connect to the enterprise network at full 54 Mbps or 108 Mbps Wi-Fi speeds wherever they happen to be working—even outdoors or in a remote facility across town. Extending the network beyond the reach of Ethernet cabling gives users more freedom and helps them be more productive. The bridges support both point-to-multipoint and point-to-point operation to meet a variety of configuration requirements.

from left: 3Com 11a 54 Mbps Wireless LAN Outdoor Building-to-Building Bridge and 11b/g Access Point, 11g 54 Mbps Wireless LAN Indoor Building-to-Building Bridge

KEY BENEFITS
(CONTINUED)

BRIDGE AND ACCESS POINT COMBINATION

The 3Com 11a Outdoor Building-to-Building Bridge and 11b/g Access Point provides point-to-point or point-to-multipoint bridge functionality while simultaneously using another band for access point operation, providing connectivity for mobile users. The access point, repeater, or bridge functionality can be independently configured on both radios, making the product extremely flexible for a variety of applications. The bridge function supports data rates up to 108 Mbps between buildings or to offsite locations. The access point function provides connectivity at up to 108 Mbps for as many as 128 users.

With access point and bridging functionality on the same unit, mobile users can link to the network and the traffic can be backhauled over a wireless point-to-point or point-to-multipoint bridge link to another unit attached to the wired network up to 15.5 kilometers (9.6 miles) away. The unit includes an embedded 17 dBi high-gain antenna for bridging applications. Optional external omni-directional and directional antennas are available separately.

WIRELESS COST ADVANTAGES

Using wireless bridges to extend the network saves the high cost of installing cable between buildings. Enterprises can also avoid the expense of leasing T1/E1 lines, which can cost up to US$1,000 per month or more. And 3Com building-to-building bridges provide 10 to 20 times the bandwidth of T1/E1 lines.

SECURE COMMUNICATIONS

To ensure privacy and protect valuable information, 3Com building-to-building bridges are equipped with a full complement of enterprise-class security features. The bridges provide the latest Wi-Fi Protected Access 2 (WPA2) with Advanced Encryption Standard (AES) wireless encryption, WPA with PSK authentication, and Wired Equivalent Privacy (WEP) encryption. They also support virtual private network (VPN) and virtual LANs (VLANs) pass-through so that data access can be restricted to specific groups or individuals. IEEE 802.1X (EAP-MD5, EAP-TLS, EAP-TTLS and PEAP) is supported for user or MAC authentication, and an embedded supplicant is included for authentication to the local LAN.

DURABLE AND RELIABLE

The outdoor bridges are designed to withstand harsh conditions, as the rugged housing guards against vibration, water and shock, and even includes internal lightning protection. An internal heater is included to help keep it operational in extreme cold environments. Dynamic Rate Shifting helps keep network connections available.

POWER FLEXIBILITY

To simplify installation where AC power outlets may not be readily available, Power over Ethernet (PoE) is supported on all bridges. The outdoor bridges require a custom PoE inserter (included with the unit) to support the higher power required for the embedded heater. The included power inserter also provides additional lightning protection, which is critical when mounting any communications equipment outdoors.

CONVENIENT INSTALLATION AND MANAGEMENT

Setup wizard software makes installation and configuration easy. Once setup is complete, the building-to-building bridges can be remotely managed using a standard Web browser or SNMP management tools.

FEATURES AND BENEFITS

ECONOMICAL, HIGH-SPEED CONNECTIVITY

Cost-effective wireless building-to-building links	Rapid return on investment in as little as two to three months by eliminating fiber cable installation or recurring T1/E1 line costs—wireless building-to-building bridge deployments cost about one tenth what cabling would cost, with no right-of-way or trenching issues.
High-speed 54 Mbps data rate (108 Mbps for bridge/access point)†	Much higher throughput than 1.5/2.0 Mbps T1/E1 lines.

OPEN AND FLEXIBLE

Wi-Fi CERTIFIED a/b/g	Ensures access point interoperability with other Wi-Fi certified products.
Range up to 10 miles (17 km)‡	Network can be extended to buildings across an entire metro area; longer distances are possible with external antenna options.
Antenna choices	4 dBi to 20 dBi panel or omni-directional antennas are available to provide maximum RF coverage for a wide range of applications.
Point-to-point and point-to-multipoint wireless bridging, and mobile user connectivity§	Access point, repeater, and bridge functionality can be independently configured on both radios, making the unit extremely flexible for a variety of applications.
Point-to-point and point-to-multipoint topology	Flexibility in configuring building-to-building networks; point-to-multipoint supports up to six bridge connections .

SECURE AND RELIABLE

WPA/TKIP, WPA2/AES§, 64-/128-/152-bit WEP, 802.1X authentication and encryption	Toughest industry-standard algorithms help keep wireless transmissions private.
VPN and VLAN pass-through˘	Supports secure tunnels and segmented traffic to protect data and provide workgroup containment.
Weatherproof, fire-resistant enclosure with integrated antenna¥	Meets stringent outdoor environmental and safety specifications.
EN/EC 60529 IPX4 rated	Meets UL and CAN/CSA standards for waterproofing.
Dynamic Rate Shifting	Matches the best connection speed in response to physical and traffic conditions so wireless connections stay reliable.

INSTALLATION AND MANAGEMENT CONVENIENCE

Power over Ethernet	PoE support eliminates the need to locate the device near existing AC power outlets; a power injector is supplied with all building-to-building bridges.
Dynamic Frequency Selection (DFS)	Detects radar signals that must be protected against IEEE 802.11a interference; automatically switches the 802.11a operating frequency to one that is not interfering with the radar systems.*
Web browser, SNMP and 3Com Network Director support	Bridges can be managed from anywhere; LANs may be seamlessly integrated with enterprise management tools.
Setup wizard	Simplifies setup procedures.

† Data throughput can vary depending upon several factors, including network traffic load, distance between bridges, antennas, line-of-sight conditions, and local and remote electromagnetic emissions (EMI) and Freznel zone obstructions.

‡ Maximum range of 10 miles requires 3Com wireless building-to-building bridges at both ends.

§ Outdoor Building-to-Building Bridge and 11b/g Access Point, 3CRWEASYA73, only.

˘ Not available with Outdoor Building-to-Building Bridge and 11b/g Access Point, 3CRWEASYA73.

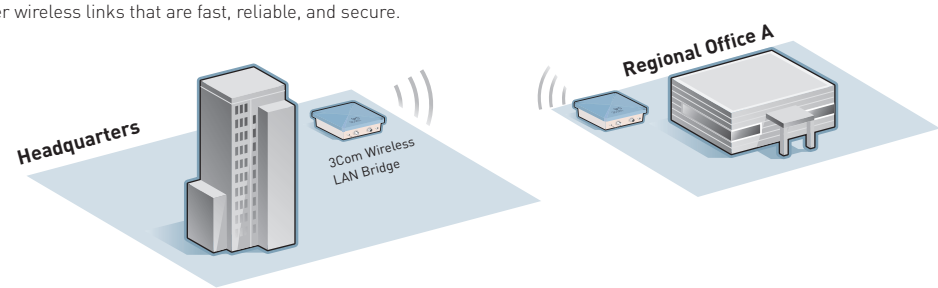
¥ Not available with Indoor Building-to-Building Bridge, 3CRWE920G73.

* Using IEEE 802.11a for bridging is not recommended in countries requiring radar detection, as link speed and quality may be adversely affected due to Dynamic Frequency Selection.

3COM 11G 54 MBPS WIRELESS LAN OUTDOOR BUILDING-TO-BUILDING BRIDGE: SAMPLE DEPLOYMENTS

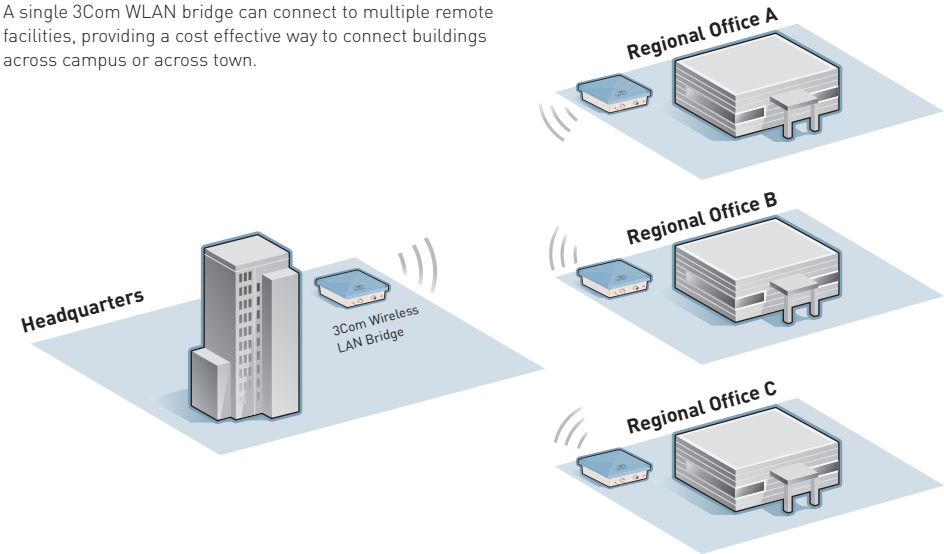
Point-to-Point Bridging

3Com WLAN bridges can be used to join sites together over wireless links that are fast, reliable, and secure.



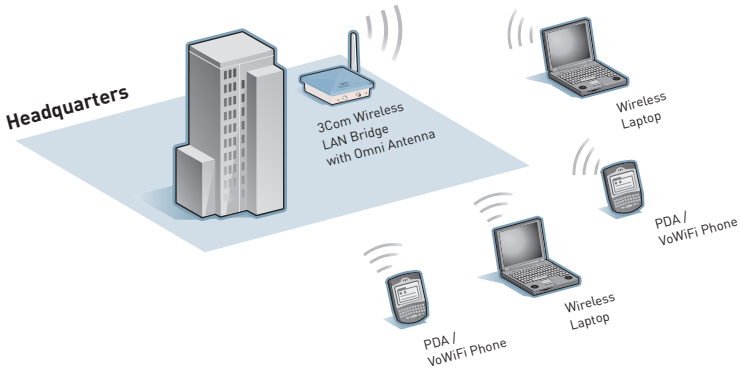
Point-to-Multipoint Bridging

A single 3Com WLAN bridge can connect to multiple remote facilities, providing a cost effective way to connect buildings across campus or across town.



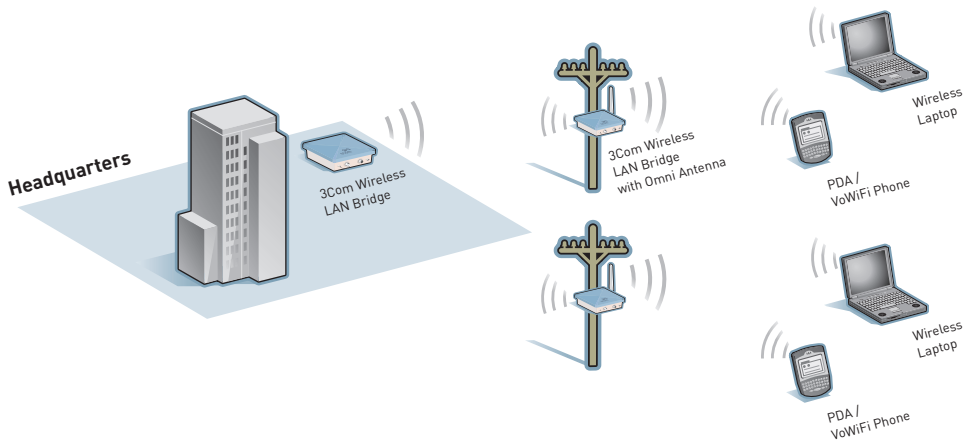
Outdoor Wireless Access

The 3Com Outdoor WLAN Bridge / AP can be mounted anywhere wireless access is required. Throughout an Enterprise, college, or hospital campus, or mounted on the side of a building, the unit provides up to 108 Mbps connectivity for mobile users on 802.11a and 802.11g, and up to 11 Mbps connectivity on 802.11b.



Outdoor Wireless Bridging and Access

The 3Com Outdoor WLAN Bridge / AP can provide access point services on one radio, while providing wireless backhaul on the other radio. Access points can be distributed throughout a campus, shopping mall, park, or apartment complexes, wherever wireless coverage is required, and can be mounted mounted anywhere power is available. Network/Internet connectivity is then provided through a wireless backhaul link to another unit attached to the corporate network/Internet.



SPECIFICATIONS

All information in this section is relevant to all members of the 3Com Building-to-Building Bridge family, unless otherwise stated.

MEDIA INTERFACES

Indoor Bridge (3CRWE920G73)
RJ-45, 10BASE-T/100BASE-TX, 802.11b/g

Outdoor Bridge/Access Point (3CRWEASYA73)
10BASE-T/100BASE-TX, 802.11a/b/g

WIRELESS DATA RATES

3CRWE920G73
802.11a: 802.11b: 11, 5.5, 2, 1 Mbps
802.11g: 54, 48, 35, 24, 18, 12, 9, 6 Mbps

3CRWEASYA73
802.11a/g: 6/9/12/18/24/36/48/54 Mbps; up to 108 Mbps (turbo and super modes)*
802.11b: 1/2/5.5/11 Mbps

FREQUENCY BAND

3CRWE920G73
802.11b/g: 2.4–2.4835 GHz

3CRWEASYA73
802.11a: 5 GHz*; **802.11b/g**: 2.4 GHz

USERS SUPPORTED§

Up to 64 simultaneous wireless users per access point radio for a total of 128

OPERATING CHANNELS

Use of this product is only authorized for the channels approved by each country. To conform to FCC and other country restrictions, this product may be limited in the channels that are available.

MODULATION TECHNIQUE

802.11a: BPSK, QPSK, 16-QAM, 64-QAM
802.11b/g: CCK, BPSK, QPSK, OFDM

MEDIA ACCESS PROTOCOL

CSMA/CA

TRANSMIT POWER SETTINGS

Based on the regulatory domain set by the system administrator, not to exceed the following:

Indoor Bridge (3CRWE920G73)
17 dBm (U.S., Canada, Mexico)
20 dBm EIRP max. depending on antenna and cable configuration (Europe, U.K., Ireland, Latin America)

Outdoor Bridge/Access Point (3CRWEASYA73)
802.11g
6 to 54 Mbps: 18 dBm (2412 and 2472 GHz); 20 dBm (2417 - 2467 GHz)

802.11b
1 to 11 Mbps: 15 dBm (2412, 2472 and 2417 - 2467 GHz)

*802.11a**
6 to 48 Mbps: 17 dBm (5.150 - 5.250, 5.250 - 5.350, 5.500 - 5.700 , and 5.725 - 5.825 GHz)
54 Mbps: 12 dBm (5.150 - 5.250 GHz), 17 dBm (5.250 - 5.35 and 5.500 - 5.700 GHz), 16 dBm (5.725 - 5.825 GHz)

RECEIVE SENSITIVITY

3CRWE920G73
802.11a
6 Mbps: -87 dBm
9 Mbps: -86 dBm
12 Mbps: -84 dBm
18 Mbps: -82 dBm
24 Mbps: -79 dBm
36 Mbps: -75 dBm
48 Mbps: -72 dBm
54 Mbps: -71 dBm

802.11b
1 Mbps: -91 dBm
2 Mbps: -89 dBm
5.5 Mbps: -88 dBm
11 Mbps: -86 dBm

802.11g
6 Mbps: -85 dBm
9 Mbps: -83 dBm
12 Mbps: -81 dBm
18 Mbps: -79 dBm
24 Mbps: -77 dBm
36 Mbps: -74 dBm
48 Mbps: -72 dBm
54 Mbps: -70 dBm

802.11a/g
1 Mbps: -95 dBm
2 Mbps: -92 dBm
5.5 Mbps: -91 dBm
6 Mbps: -89 dBm
9 Mbps: -88 dBm
11 Mbps: -88 dBm
12 Mbps: -86 dBm
18 Mbps: -84 dBm
24 Mbps: -81 dBm
36 Mbps: -77 dBm
48 Mbps: -73 dBm
54 Mbps: -72 dBm

3CRWEASYA73
802.11a
6 Mbps: -88 dBm
9 Mbps: -87 dBm
12 Mbps: -86 dBm
18 Mbps: -84 dBm
24 Mbps: -81 dBm
36 Mbps: -75 dBm
48 Mbps: -72 dBm
54 Mbps: -71 dBm

802.11b
1 Mbps: -93 dBm
2 Mbps: -90 dBm
5.5 Mbps: -90 dBm
11 Mbps: -87 dBm

802.11g
6 Mbps: -88 dBm
9 Mbps: -87 dBm
12 Mbps: -86 dBm
18 Mbps: -85 dBm
24 Mbps: -81 dBm
36 Mbps:
-77 dBm (5.150 - 5.350 GHz)
-78 dBm (5.500 - 5.825 GHz)
48 Mbps: -73 dBm
54 Mbps:
-69 dBm (5.150 - 5.250 GHz)
-70 dBm (5.250 - 5.700 GHz)
-67 dBm (5.725 - 5.825 GHz)

* Using IEEE 802.11a for bridging is not recommended in countries requiring radar detection, as link speed and quality may be adversely affected due to Dynamic Frequency Selection (DFS).
§ Outdoor Building-to-Building Bridge and 11b/g Access Point, 3CRWEASYA73, only.

SPECIFICATIONS
(CONTINUED)

STANDARDS CONFORMANCE
IEEE 802.11b, 802.11g, 802.11a[§], 802.3, 802.1X[§], WPA2[§], WPA, WEP, AES, EAP, FTP, HTTP, IAPP, NTP, SNMP, SNTP, DFS[§*]

ANTENNA
Indoor Bridge (3CRWE920G73): Antenna must be ordered at time of bridge purchase

Outdoor Bridge/Access Point (3CRWEASYA73): Integrated 17 dBi antenna; 18° horizontal beamwidth, 18° vertical beamwidth; unit supports 1 external 802.11a and 2 external 802.11g antennas with "N" connectors.

SECURITY
3CRWE920G73
64-/128-bit WEP, WPA/TKIP encryption
WPA-PSK (AES) authentication
Local MAC address filtering
VPN and VLAN pass-through

3CRWEASYA73
WPA/TKIP, WPA2/AES
40/64-, 104/128-, 128/152-bit WEP
Local MAC authentication
RADIUS MAC authentication
Local MAC address filtering
RADIUS client support
Access Control Lists (ACLs)
SSL/SSH
IEEE 802.1X authentication access control with key rotation
IEEE 802.1X mutual authentication access control between two bridged access points

NETWORKING PROTOCOLS
NetBEUI, IPX, TCP/IP, Bridging Protocol, Spanning Tree Protocol, SNMP, DHCP

PERFORMANCE
3CRWE920G73
Dynamic rate shifting
Packet bursting
Clear channel connect

3CRWEASYA73
Dynamic rate shifting
Packet bursting
Clear channel connect
802.11a/g turbo and Super G modes

MANAGEMENT
3CRWE920G73
CLI via Telnet or SSN
HTTP or HTTPS web browser interface
SNMP v1 and 3
3Com Network Director
Remote software upgrade via HTTP

3CRWEASYA73
CLI via console port or Telnet / SSH
HTTP or HTTPS web browser interface
SNMP v1 and 3
3Com Wireless Infrastructure Device Manager (Widman)

LEDS
3CRWE920G73
Power, LAN activity, radio activity

3CRWEASYA73
Power, reset, Ethernet link, Ethernet activity, radio activity, bridge link RSSI

DIMENSIONS AND WEIGHT
3CRWE920G73
Length: 17.5 cm (6.9 in)
Width: 12.1 cm (4.76 in)
Height: 3.6 cm (1.4 in)
Weight: 0.26 kg (0.575 lb)

3CRWEASYA73
Length: 19.5 cm (7.6 in)
Width: 19 cm (7.4 in)
Height: 7.4 cm (2.8 in)
Weight: 5.3 kg (11.6 lb)

REGULATORY/AGENCY APPROVALS
Safety
EN 60950 2000, IEC 60950 Edition 3, CSA 22.2 60950 3rd edition, UL 60950 3rd edition, UL 2043, IEC 60529, NOM-109 SCFI, AS/NZ 3260

Radio/ Electromagnetic
47 CFR Part 15, Section 15.247, 15.207, 15.407; FCC 03-287 Parts 2 & 15, FCC Bulletin OEC-65; Canada RSS-102 Issues 1 & 5; EN 300-328, EN 301 983, EN 301-489

Emissions/Immunity
ICES-003 Class B, FCC Part 15 Class B, ETSI EN 301 489-17, EN 55022: 1994+ A1: 1995+A2: 1997 Class A, EN 61000-3-2:2000, EN 61000-3-3: 1995+A1:2001

* Using IEEE 802.11a for bridging is not recommended in countries requiring radar detection, as link speed and quality may be adversely affected due to Dynamic Frequency Selection (DFS).

§ Outdoor Building-to-Building Bridge and 11b/g Access Point, 3CRWEASYA73, only.

SPECIFICATIONS (CONTINUED)

ENVIRONMENTAL RANGES

3CRWE920G73

Operating temperature: -33 to 50°C (-27 to 122° F)

Wind¥: operational loading up to 153 kph (95 mph); wind survival to 201 kph (125 mph)

Vibration class 4M3

Transportation environment: ETS 300 019-2-2 Class 2.3 public transportation

Storage environment shock: IEC 68-2-29

Drop: IEC 68-2-32

Lightning¥: unit should withstand a +4KV of Input surge, 1.2 µsec rise/fall time, 50 µsec duration, every 10 seconds, for both RF and IF ports

3CRWEASYA73

Operating temperature: -40 to 65°C (-40 to 149° F)

Wind: operational loading up to 246 kph (100 mph); wind survival to 241 kph (150 mph)

Vibration class 4M3

Transportation environment: ETS 300 019-2-2 Class 2.3 Public Transportation

Storage environment shock: IEC 68-2-29

Drop: IEC 68-2-32

Lightning: unit should withstand a +4KV of input surge, 1.2 µsec rise/fall time, 50 µsec duration, every 10 sec., for both RF and IF ports

PACKAGE CONTENTS

3CRWE920G73

11g Wireless 54 Mbps Wireless LAN Indoor Building-to-Building Bridge, power adapter for PoE injector, power cable(s) for PoE injector, mounting bracket, CD-ROM with user guide and configuration software, warranty booklet

3CRWEASYA73

11a Wireless 54 Mbps Wireless LAN Indoor Building-to-Building Bridge and 11b/g Access Point (with internal lightning protection), power injector and 30 meter (98 ft) power cable, PoE inserter, wall and pole mounting brackets, grounding wire, weather-proof Ethernet and console cables, CD-ROM with Setup Wizard software and user's manual, warranty booklet

WARRANTY AND OTHER SERVICES

One Year Limited Hardware Warranty. Limited Software Warranty for 90 days. 90 days of telephone technical support.

Refer to **www.3com.com/warranty** for details.

ORDERING INFORMATION

PRODUCT DESCRIPTION	3COM SKU
3Com 11g 54 Mbps Wireless LAN Indoor Building-to-Building Bridge	3CRWE920G73
3Com 11a 54 Mbps Wireless LAN Outdoor Building-to-Building Bridge and 11b/g Access Point	3CRWEASYA73
Indoor Bridge (3CRWE920G73) Accessories	
3Com 6/8 dBi Dual-Band Omni Antenna	3CWE591
3Com 3/4 dBi Dual-Band Ceiling Mount Antenna	3CWE592
3Com 18/20 dBi Dual-Band Panel Antenna	3CWE596
3Com 4/6 dBi Dual-Band Hallway Antenna	3CWE597
3Com 8/10 dBi Dual Band Panel Antenna	3CWE598
3Com Ultra-Low Loss Antenna Cable 6-Foot	3CWE580
3Com Ultra-Low Loss Antenna Cable 20-Foot	3CWE581
3Com Ultra-Low Loss Antenna Cable 50-Foot	3CWE582
3Com RSMA to SMA 6" Antenna Cable	3CWE586
Outdoor Bridge/Access Point (3CRWEASYA73) Accessories	
3Com 6/8 dBi Dual-Band Omni Antenna	3CWE591
3Com 18/20 dBi Dual-Band Panel Antenna	3CWE596
3Com 8/10 dBi Dual-Band Panel Antenna	3CWE598
3Com Ultra-Low-Loss N-to-N Antenna Cable 6-Foot	3CWE810
3Com Ultra-Low-Loss N-to-N Antenna Cable 20-Foot	3CWE811
3Com Ultra-Low-Loss N-to-N Antenna Cable 50-Foot	3CWE812
3Com Global Services	
3Com Wireless LAN Site Survey, Network Health Check, Installation Services and Express℠ Maintenance	www.3com.com/services_quote
3Com University Courses	www.3com.com/3comu

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