

# Cisco 1750 Modular Access Router

Delivering flexibility, integration and multiservice voice/data-capable access to small and medium-size businesses and small branch offices

Intranets and the Internet have become fundamental strategic resources for businesses, enabling applications that reduce operational costs, increase collaboration, and raise productivity. The future will continue to bring rapid advancements in networking applications and technologies. Companies that prepare for this new world of networking as they implement access solutions today stand to gain a significant competitive advantage.

Preparing a small or medium-size business or an enterprise small branch office for the future means implementing network equipment with three key criteria:

- Flexibility to adapt to changing requirements
- Investment protection with features and performance to support new WAN services such as multiservice voice/data integration, virtual private networks (VPNs), and broadband DSL and cable access today or when needed
- Integration of multiple network functions, including an optional firewall and data service unit/channel service unit (DSU/CSU) to simplify deployment and management

The Cisco 1750 access router delivers these capabilities with the power of Cisco IOS® software in a modular integrated access solution. The Cisco 1750 provides a cost-effective solution to support applications, including:

- Secure Internet, intranet, and extranet access with optional firewall
- Multiservice voice/fax/data integration
- VPN access
- Broadband DSL and cable connectivity

The Cisco 1750 features a modular architecture that enables users to cost-effectively upgrade or add WAN and voice interfaces to accommodate changing requirements and growth. Integrated network services and functions, including an optional firewall, CSU/DSU, and VPN features, reduce the complexity of deploying and managing branch office solutions. Most important, the Cisco 1750 offers investment protection with a RISC architecture and features to support new technologies and applications, including voice/fax/data integration and VPNs, when users are ready to deploy them.

The Cisco 1750 is available in three models that enable users to easily tailor an access solution to suit their branch office requirements today and in the future:

- Cisco 1750—The most basic model available, this unit provides everything a small branch office needs for data networking now, with a simple upgrade path to support integrated voice/fax/data applications when needed. A convenient voice upgrade kit is available to provide voice/fax/data support as needed.
- Cisco 1750-2V Multiservice model—This model includes all the features, memory, and DSP needed for immediate support of integrated voice/fax/data applications with up to two analog voice ports. Voice and WAN interface cards are available separately.
- Cisco 1750-4V Multiservice model—This model includes all the features, memory, and DSPs needed to support integrated multiservice voice/fax/data applications immediately with up to four analog voice ports. Voice and WAN interface cards are available separately.

All Cisco 1750 models offer three modular slots for voice and data interface cards, an autosensing 10/100BaseT Ethernet LAN port, a console port, and an auxiliary port. The Cisco 1750 supports the same WAN interface cards as the Cisco 1600, 1720, 2600, and 3600 routers, and the same analog voice interface cards and voice-over-IP technology as the Cisco 2600 and 3600 routers, simplifying spanning support requirements. The WAN interface cards support a wide range of services, including synchronous and asynchronous serial, Integrated Services Digital Network Basic Rate Interface (ISDN BRI), and serial with DSU/CSU options for primary and backup WAN connectivity. The voice interface cards include support for Foreign Exchange Office (FXO), Foreign Exchange Station (FXS), and Ear & Mouth (E&M). Combined, these interfaces support a comprehensive set of applications, including multiservice voice/fax/data integration, Frame Relay, ISDN BRI, SMDS, X.25, broadband DSL and cable services, VPNs, and more.

Figure 1 The Cisco 1750 modular access router integrates voice and data services on a single network to dramatically reduce long-distance toll charges. Its compact, modular form adapts easily as business needs evolve.



### Key Benefits

The Cisco 1700 series supports the value of end-to-end Cisco network solutions with the following benefits:

- Flexibility—The modular Cisco 1750 adapts easily to fit the needs of businesses. Interchangeable WAN interface cards enable easy additions or changes in WAN technologies without requiring a forklift upgrade of the entire platform. Modular data and voice slots enable users to tailor data and voice services as needed. With the ability to use the same field-upgradable WAN and voice interface cards across multiple Cisco access router platforms, the Cisco 1750 reduces requirements for spare parts inventory and support training. In addition, the autosensing 10/100BaseT Fast Ethernet port enables easy migration to high-speed local networks.
- Multiservice Access—For businesses that have data networking needs today and want to integrate multiservice data/voice/video/fax capabilities now or in the future, the Cisco 1750 offers a flexible, cost-effective answer. The Cisco 1750 enables network managers to save on long-distance interoffice billing costs and interoperates with next-generation



voice-enabled applications such as integrated messaging and Web-based call centers. The Cisco 1750 works with the existing telephone infrastructure—phones, fax machines, key telephone systems (KTS) units, and PBX—minimizing capital costs.

- Lower Cost of Ownership—The Cisco 1750 router provides a complete solution for integrated voice and data access in a single product, eliminating the need to install and maintain a large number of separate devices. You can combine optional functions, including a voice gateway, dynamic firewall, VPN tunnel server, DSU/CSU, ISDN network termination-1 (NT1) device, and more to reduce deployment and management costs. This solution can be managed remotely using network management applications such as CiscoWorks and CiscoView or any SNMP-based management tool.
- Investment Protection—The Cisco 1750 RISC architecture, Cisco IOS software, and modular slots provide solid investment protection to companies that want a platform that offers data connectivity today and an easy migration path to implement services such as multiservice data/voice/video integration, VPNs, and broadband DSL and cable communications in the near future. A slot on the 1700 series motherboard offers the ability to support future hardware-assisted data encryption at T1/E1 speeds.

## Cisco IOS Technology

### Internet and Intranet Access

Cisco IOS software provides an extensive set of features that make the Cisco 1750 router ideal for flexible, high-performance communications across both intranets and the Internet:

- Multiprotocol routing (IP, IPX, and AppleTalk), IBM/SNA, and transparent bridging over ISDN, asynchronous serial, and synchronous serial such as leased lines, Frame Relay, SMDS, Switched 56, X.25, and X.25 over D
- WAN optimization—including dial-on-demand routing (DDR), bandwidth-on-demand (BOD) and OSPF-on-demand circuit, Snapshot routing, compression, filtering, and spoofing to reduce WAN costs

### Security

Cisco IOS software supports an extensive set of basic and advanced network security features, including access control lists (ACLs), user authentication, authorization, and accounting (such as PAP/CHAP, TACACS+, and RADIUS), and data encryption. To increase security, the integrated Cisco IOS Firewall Feature Set protects internal LANs from attacks with context-based access control (CBAC), while IPSec tunneling with data encryption standard (DES) and triple DES encryption provide standards-based data privacy, integrity, and authenticity as data travels through a public network.

For remote access VPNs, Layer 2 Forwarding (L2F) and Layer 2 Tunneling Protocol (L2TP) combine with IPSec encryption to provide a secure multiprotocol solution (for IP, IPX, and AppleTalk traffic, and more). Mobile users can dial in to a service provider's local point of presence (POP) and data is "tunneled" (or encapsulated inside a second protocol such as IPSec or L2TP) back to the Cisco 1750 router to securely access the corporate network via the Internet.

### Cisco IOS Software QoS Features

Through Cisco IOS software, the Cisco 1750 router delivers quality of service (QoS) capabilities, including Resource ReSerVation Protocol (RSVP), Weighted Fair Queuing (WFQ), Committed Access Rate (CAR), IP Precedence, DSCP Marking, Compressed RTP (cRTP), multiple link PPP (MLPPP) and link fragmentation and interleaving (LFI). These features enable businesses to prioritize traffic on their networks by user, application, traffic type, and other parameters, to ensure that business-critical data and delay-sensitive voice receive the priority they need as they move across the network.

Because the Cisco 1750 router provides robust voice compression, up to six voice calls can occupy a single 64K data channel simultaneously, without compromising data

performance. The Cisco IOS voice compression technology integrates data and voice traffic to enable efficient use of existing data networks.

### High-Performance Architecture for VPNs and Broadband Service

A robust RISC architecture and Cisco IOS features enable the Cisco 1750 to support VPN applications with tunneling and security, as well as DSL, cable, and other broadband access technologies. A slot on the Cisco 1750 motherboard supports an optional VPN module that provides IPSec DES and 3DES encryption at T1/E1 speeds in hardware. The Cisco 1750 with the Cisco 633 router provides SDSL service and the Cisco 1750 with the uBR910 series cable DSU supports business-class broadband cable access today.

### Ease of Installation and Management

Cisco ConfigMaker, a wizard-based software setup tool, makes it easy to configure Cisco 1750 routers and other Cisco devices from a Windows-based PC. And CiscoWorks2000 provides central monitoring and troubleshooting of remote Cisco 1750 routers, saving time and preventing costly IT trips to branch offices.

The Cisco 1750 router supports a range of network management and ease-of-installation tools:

- Cisco ConfigMaker is a Windows wizard-based tool designed to configure a small network of Cisco routers, switches, hubs, and other network devices from a single PC. This tool makes it simple to configure value-add security features such as the Cisco IOS Firewall Feature Set, IPSec encryption, and network address translation (NAT); establish VPN policies (including QoS and security); and configure the Dynamic Host Configuration Protocol (DHCP) server.

- CiscoView, a GUI-based device management software application for UNIX platforms, provides dynamic status, statistics, and comprehensive configuration information.
- CiscoWorks2000, the industry-leading Web-based network management suite from Cisco, simplifies tasks such as network inventory management and device change, rapid software image deployment, and troubleshooting.
- For service providers, Cisco Service Management (CSM) provides an extensive suite of service management solutions to enable planning, provisioning, monitoring, and billing.

### Extending Cisco End-to-End Solutions

As part of the comprehensive Cisco end-to-end networking solution, the Cisco 1700 series enables businesses to extend a cost-effective, seamless network infrastructure to the small branch office. The Cisco 1700 family of access routers includes the Cisco 1750 and the Cisco 1720—a modular device optimized for data-only connections. All WAN cards work with both devices, as well as with Cisco 1600, 2600, and 3600 series routers. Both are powered by Cisco IOS software for robust WAN service between branches and central offices in organizations with multiple sites, and both feature RISC-based processors to provide performance for encryption and support for emerging broadband technologies.

The Cisco 1750 also shares voice-over-IP technology and analog voice interface cards with Cisco 2600 and 3600 series routers. This feature provides an end-to-end solution for multiservices communications between offices, simplifying inventory needs and leveraging IT expertise across more devices in the organization.



## Features and Benefits

Table 1 Key Features and Benefits

| Features   | Benefits   |
|--|--|
| Flexibility  |  |
| Full Cisco IOS support, including multiprotocol routing (IP, IPX, AppleTalk, IBM/SNA) and bridging   | <ul style="list-style-type: none"> <li>• Provides the industry's most robust, scalable, and feature-rich internetworking software support using the <i>de facto</i> standard networking software for the Internet and private WANs</li> <li>• Part of the Cisco end-to-end network solution</li> </ul>                         |
| Integrated Voice and Data Networking   |  |
| Cisco 1750 router chassis accepts both WAN and voice interface cards   | <ul style="list-style-type: none"> <li>• Reduces long-distance toll charges by allowing the data network to carry interoffice voice and fax traffic</li> <li>• Works with existing handsets, key units, and PBXs, eliminating the need for a costly phone-equipment upgrade</li> </ul>   |
| Modular Architecture   |  |
| Accepts an array of WAN and voice interface cards  | <ul style="list-style-type: none"> <li>• Added flexibility and investment protection</li> </ul>  |
| WAN interface cards shared with Cisco 1600, 2600, and 3600 routers   | <ul style="list-style-type: none"> <li>• Reduced cost of maintaining inventory</li> <li>• Lowers training costs for support personnel</li> <li>• Protects investments through reuse on various platforms</li> </ul>  |
| Autosensing 10/100 Fast Ethernet   | <ul style="list-style-type: none"> <li>• Simplifies migration to Fast Ethernet performance in the office</li> </ul>  |
| Expansion Slot on Motherboard  | <ul style="list-style-type: none"> <li>• Allows expandability to support future hardware-assisted encryption at T1/E1 speeds</li> </ul>  |
| Security   |  |
| The Cisco IOS Firewall feature set includes context-based access control for dynamic firewall filtering, denial of service detection and prevention, Java blocking, real-time alerts, and encryption | <ul style="list-style-type: none"> <li>• Allows internal users to access the Internet with secure, per-application-based, dynamic access control while preventing unauthorized Internet users from accessing the internal LAN</li> </ul>   |
| IPSec DES and triple DES<br>Expansion slot for future high-speed, hardware-based encryption at T1/E1 speeds  | <ul style="list-style-type: none"> <li>• Enables creation of VPNs by providing industry-standard data privacy, integrity, and authenticity as data traverses the Internet or a shared public network</li> <li>• Provides an option to upgrade to high-speed hardware-assisted encryption up to T1/E1 when available</li> </ul> |
| RISC Processor   | <ul style="list-style-type: none"> <li>• Enables software-based encryption performance at 512 kbps for VPNs</li> </ul>   |
| Device Authentication and Key Management   |  |
| IKE, X.509v3 digital certification, and support for certificate enrollment protocol (CEP) with certification authorities (CAs) such as Verisign and Entrust  | <ul style="list-style-type: none"> <li>• Ensures proper identity and authenticity of devices and data</li> <li>• Enables scalability to very large IPSec networks through automated key management</li> </ul>  |
| User Authentication  |  |
| PAP/CHAP, RADIUS, TACACS+  | <ul style="list-style-type: none"> <li>• Supports all leading user identity verification schemes</li> </ul>  |

Table 1 Key Features and Benefits (Continued)

| Features   | Benefits   |
|--|--|
| VPN Tunneling  |  |
| IPSec, GRE, L2TP, L2F  | <ul style="list-style-type: none"> <li>• Choice of standards-based tunneling methods to create VPNs for IP and non-IP traffic</li> <li>• Allows any standards-based IPSec or L2TP client to interoperate with Cisco IOS tunneling technologies</li> <li>• Fully interoperable with public certificate authorities and IPSec standards-based products</li> <li>• Part of the scalable Cisco end-to-end VPN solution portfolio</li> </ul>            |
| Management   |  |
| Manageable via SNMP (CiscoView, CiscoWorks 2000), Telnet, and console port   | <ul style="list-style-type: none"> <li>• Allows central monitoring, configuration, and diagnostics for all functions integrated in the Cisco 1750 router, reducing management time and costs</li> </ul>  |
| Ease of Use and Installation   |  |
| Cisco ConfigMaker, SETUP configuration utility, AutoInstall, color-coded ports/cables, and LED status indicators             | <ul style="list-style-type: none"> <li>• Simplifies and reduces deployment time and costs with graphical LAN/VPN policy configurator; command-line, context-sensitive configuration questions; and straightforward cabling</li> <li>• LEDs allows quick diagnostics and troubleshooting</li> </ul>   |
| Network Address Translation and Easy IP  | <ul style="list-style-type: none"> <li>• Simplifies deployment and reduces Internet access costs</li> </ul>  |
| QoS  |  |
| CAR, Policy Routing, WFQ, GTS, RSVP, DSCP, cRTP, MLPPP and LFI   | <ul style="list-style-type: none"> <li>• Allocates WAN bandwidth to priority applications for improved performance</li> </ul>  |
| Reliability and Scalability  |  |
| Cisco IOS software, dial-on-demand routing, dual-bank Flash memory, scalable routing protocols such as OSPF, EIGRP, and HSRP | <ul style="list-style-type: none"> <li>• Improves network reliability and enables scalability to large networks</li> </ul>   |
| Broadband Connectivity Options   |  |
| SDSL, ADSL and cable connectivity deliver business-class broadband access  | <ul style="list-style-type: none"> <li>• Leverage broadband access technologies like cable and DSL to increase WAN connectivity speeds and reduce WAN access costs</li> <li>• The Cisco 1750 supports SDSL and ADSL connectivity with Cisco 633 SDSL router and ADSL WIC (August, 2000)</li> <li>• Cable connectivity with the Cisco 1750 and optional integrated Cisco uBR910 Series Cable DSU deliver business-class broadband access</li> </ul> |
| Device Integration   |  |
| Integrated router, voice gateway, firewall, encryption, VPN tunnel server, DSU/CSU, and NT1 in a single device               | <ul style="list-style-type: none"> <li>• Reduces costs and simplifies management</li> </ul>  |



## Product Specifications

Table 2 Physical Interfaces/Ports

| Feature  | Description  |
|--|--|
| One 10/100BaseTX Fast Ethernet port (RJ45)                   | Automatic speed detection; automatic duplex negotiation  |
| One Voice interface card slot                                | Supports a single voice interface card (Table 4) with two ports per card   |
| Two WAN interface card/Voice interface card slots            | Supports any combination of up to two WAN interface cards (Table 3) or Voice interface cards (Table 4)   |
| Synchronous serial interfaces on serial WAN interface cards  | Interface speed: up to 2.0 Mbps (T1/E1); synchronous serial protocols: PPP, HDLC, LAPB, IBM/SNA; synchronous serial WAN services: Frame Relay, X.25, SMDS; synchronous serial interfaces supported on the WIC-1T, WIC-2T, and WIC-2A/S cards: V.35, EIA/TIA-232, EIA/TIA-449, X.21, EIA-530; provides connectivity to Cisco uBR910 series cable DSU for broadband cable access |
| Asynchronous serial interfaces on serial WAN interface cards | Interface speed: up to 115.2 kbps; Asynchronous serial protocols: Point-to-Point Protocol (PPP), Serial Line Internet Protocol (SLIP); asynchronous interface: EIA/TIA-232   |
| ISDN WAN interface cards                                     | ISDN dialup and ISDN leased line (IDSL) at 64 and 128 kbps; encapsulation over ISDN leased line: Frame Relay and PPP   |
| One auxiliary (AUX) port                                     | RJ-45 jack with RS232 interface (plug compatible with Cisco 2500 series AUX port); asynchronous serial DTE with full modem controls (CD, DSR, RTS, CTS); asynchronous serial data rates up to 115.2 kbps   |
| One console port   | RJ-45 jack with RS232 interface (plug compatible with Cisco 1000/1600/2500 series console ports); asynchronous serial DTE; transmit/receive rates up to 115.2 kbps (default 9600 bps, not a network data port); no hardware handshaking such as RTS/CTS  |
| One internal expansion slot                                  | Supports hardware-assisted services such as encryption (up to T1/E1)   |
| RISC Processor   | Motorola MPC860T PowerQUICC at 48 MHz  |
| DRAM   | <ul style="list-style-type: none"><li>• Run from RAM architecture</li><li>• Onboard (fixed/default): 16 MB; one DIMM slot; available DIMM sizes: 4, 8, 16, 32 MB; maximum DRAM: 48 MB</li></ul>  |
| Flash memory   | Type: onboard (socketed) miniflash card; default: 4 MB; available sizes: 4, 8, 16 MB; maximum flash: 16 MB; support dual flash bank  |

Table 3 WAN Interface Cards for the Cisco 1750

| Module        | Description  |
|---------------|--|
| WIC-1T        | One serial, async, and sync (T1/E1)                    |
| WIC-2T        | Two serial, async, and sync (T1/E1)                    |
| WIC-2A/S      | Two low-speed serial (up to 128 kbps), async, and sync |
| WIC-1B-S/T    | One ISDN BRI S/T                                       |
| WIC-1B-U      | One ISDN BRI U with integrated NT1                     |
| WIC-1DSU-56K4 | One integrated 56/64-kbps, four-wire DSU/CSU           |
| WIC-1DSU-T1   | One integrated T1/fractional T1 DSU/CSU                |

Table 4 Voice Interface Cards for the Cisco 1750

| Module      | Description  |
|-------------|--|
| VIC-2FXS    | Two-port FXS voice/fax interface card for voice/fax network module   |
| VIC-2FXO    | Two-port FXO voice/fax interface card for voice/fax network module   |
| VIC-2FXO-EU | Two-port FXO voice/fax interface card for Europe   |
| VIC-2FXO-M1 | Two-port voice/fax interface card with battery reversal detection and Caller ID support (for U.S., Canada and others) [enhanced version of the VIC-2FXO] |
| VIC-2FXO-M2 | Two-port FXO voice/fax interface card with battery reversal detection and Caller ID support (for Europe) [enhanced version of VIC-2FXO-EU]               |
| VIC-2FXO-M3 | Two-port FXO voice/fax interface card for Australia  |
| VIC-2E/M    | Two-port E&M voice/fax interface card for voice/fax network module   |

### Convenient Configurations for Multiservice Data/Voice/Fax Integration Now or Later

The Cisco 1750 modular access router is available in three base models:

Table 5 Cisco 1750 Modular Access Router

|  |  |
|--|--|
| Cisco 1750<br>Cisco product number:<br>CISCO1750                             | Includes everything an office needs for data networking now (4 MB Flash, 16 MB DRAM, and Cisco IOS IP software feature set), with a simple upgrade path to full voice functionality.                                   |
| Cisco 1750-2V<br>Multiservice Model<br>Cisco product number:<br>CISCO1750-2V | Includes all the features needed for immediate integration of data and voice services (8 MB Flash, 32 MB DRAM, 1 DSP and Cisco IOS IP Plus Voice feature set). Voice and WAN interface cards are available separately. |
| Cisco 1750-4V<br>Multiservice Model<br>Cisco product number:<br>CISCO1750-4V | Includes hardware to support up to four voice ports in a single Cisco 1750 router (8 MB Flash, 32 MB DRAM, 2 DSPs and Cisco IOS IP Plus Voice feature sets). Voice and WAN interface cards available separately.       |

Two upgrade packages are available to add voice support to 1750 model to cost-effectively implement multiservice applications when users are ready to implement them.

- Cisco 1750 two-port voice upgrade kit—A convenient package of the components needed to cost-effectively equip a data only Cisco 1750 to support voice up to two ports (includes Flash memory and DRAM upgrades, one DSP and Cisco IOS IP/Voice Plus feature set). Voice interface cards can be ordered separately.
- Cisco 1750 four-port voice upgrade kit—A convenient package of the components needed to cost-effectively equip a data-only Cisco 1750 to support voice for up to four ports (includes Flash memory and DRAM upgrades, two DSPs and Cisco IOS IP/Voice Plus feature set). Voice interface cards can be ordered separately.





## Cisco IOS Software Feature Sets

The Cisco 1750 router supports a choice of Cisco IOS software feature sets with rich data features (Tables 6 and 8) as well as data/voice features (Tables 7 and 9).

Other IOS features include:

### QoS features:

- Frame Relay Fragmentation (FRF.12)
- IP Precedence
- Generic Traffic Shaping (GTS)
- Frame Relay Traffic Shaping (FRTS)
- Weighted Random Early Detection (WRED)
- RSVP
- DSCP Marking

- Compressed RTP
- Multiple Link PPP & LFI
- Queuing Techniques = WFQ, PQ, LLQ, CQ

### Voice support:

- VoIP
- VoFR
- VoATM\*

### Codec support:

- G.711
- G.729
- G.729a
- G.723.1
- G.726

Table 6 Cisco 1700 Software Feature Set for Cisco IOS Release 12.2.(2)XJ

| Software Product Description                    | S/W Image              | Product Code      |
|---|------------------------|-------------------|
| IP/ADSL/IPX/AT/IBM/VOICE/FW/IDS PLUS IPSEC 56   | c1700-bk8no3r2sv3y7-mz | S17Q7HVK8-12202XJ |
| IP/ADSL/IPX/AT/IBM/FW/IDS PLUS IPSEC 56         | c1700-bk8no3r2sy7-mz   | S17Q7HK8-12202XJ  |
| IP/ADSL/IPX/AT/IBM/VOICE/FW/IDS PLUS IPSEC 3DES | c1700-bk9no3r2sv3y7-mz | S17Q7HVK9-12202XJ |
| IP/ADSL/IPX/AT/IBM/FW/IDS PLUS IPSEC 3DES       | c1700-bk9no3r2sy7-mz   | S17Q7HK9-12202XJ  |
| IP/ADSL/IPX/AT/IBM PLUS                         | c1700-bnr2sy7-mz       | S17Q7P-12202XJ    |
| IP/IPX/AT/IBM                                   | c1700-bnr2y-mz         | S17Q-12202XJ      |
| IP/ADSL/VOICE/FW/IDS PLUS IPSEC 56              | c1700-k8o3sv3y7-mz     | S17C7HVK8-12202XJ |
| IP/ADSL/FW/IDS PLUS IPSEC 56                    | c1700-k8o3sy7-mz       | S17C7HK8-12202XJ  |
| IP/ADSL/VOICE PLUS IPSEC 56                     | c1700-k8sv3y7-mz       | S17C7VK8-12202XJ  |
| IP/ADSL PLUS IPSEC 56                           | c1700-k8sy7-mz         | S17C7K8-12202XJ   |
| IP/ADSL/VOICE/FW/IDS PLUS IPSEC 3DES            | c1700-k9o3sv3y7-mz     | S17C7HVK9-12202XJ |
| IP/ADSL/FW/IDS PLUS IPSEC 3DES                  | c1700-k9o3sy7-mz       | S17C7HK9-12202XJ  |
| IP/ADSL/VOICE PLUS IPSEC 3DES                   | c1700-k9sv3y7-mz       | S17C7VK9-12202XJ  |
| IP/ADSL PLUS IPSEC 3DES                         | c1700-k9sy7-mz         | S17C7K9-12202XJ   |
| IP/ADSL/IPX/VOICE/FW/IDS PLUS                   | c1700-no3sv3y7-mz      | S17B7HPV-12202XJ  |
| IP/ADSL/IPX/FW/IDS PLUS                         | c1700-no3sy7-mz        | S17B7HP-12202XJ   |
| IP/IPX  | c1700-ny-mz            | S17B-12202XJ      |

| Software Product Description | S/W Image        | Product Code                    |
|------------------------------|------------------|---------------------------------|
| IP/ADSL/VOICE/FW/IDS PLUS    | c1700-o3sv3y7-mz | S17C7HV-12202XJ                 |
| IP/FW/IDS                    | c1700-o3y-mz     | S17CH-12202XJ                   |
| IP/VOICE PLUS                | c1700-sv3y-mz    | S17CVP-12202XJ                  |
| IP/ADSL/VOICE PLUS           | c1700-sv3y7-mz   | S17C7VP-12202XJ                 |
| IP/ADSL PLUS                 | c1700-sy7-mz     | S17C7P-12202XJ                  |
| IP                           | c1700-y-mz       | S17C-12202XJ                    |
| IP/ADSL                      | c1700-y7-mz      | S17C7-12202XJ<br>S17C7-12202XJ= |

### Dimensions

- Width: 11.2 in. (28.4 cm)
- Height: 4.0 in. (10.0 cm)
- Depth: 8.7 in. (22.1 cm)
- Weight (minimum): 3.0 lbs (1.36 kg)
- Weight (maximum): 3.5 lbs (1.59 kg)

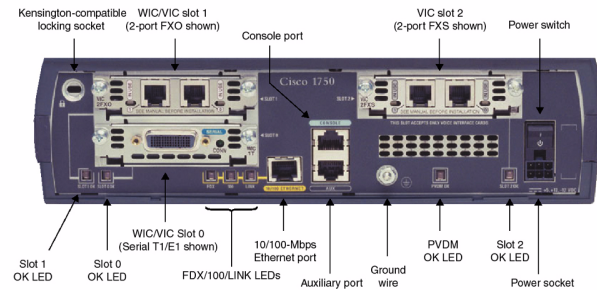
### Power

- Locking connector on power socket
- AC Input Voltage: 100 to 240 VAC
- Frequency: 47 to 64 Hz
- AC Input Current: 0.5 amps
- Power Dissipation: 20 watts (maximum)

### Environmental

- Operating Temperature: 32 to 104 F (0 to 40 C)
  - Nonoperating Temperature: -4 to 149 F (-20 to 65 C)
  - Relative Humidity: 10 to 85% noncondensing operating; 5 to 95% noncondensing, nonoperating
- Safety

Figure 2 Rear Panel of the Cisco 1750 Modular Access Router



## Regulatory Approvals

- UL 1950
- CSA 22.2 No 950
- EN60950
- EN41003
- AUSTEL TS001
- AS/NZS 3260
- ETSI 300-047
- BS 6301 (power supply) EMI
- AS/NRZ 3548 Class A
- Class B
- FCC Part 15 Class B
- EN60555-2 Class B
- EN55022 Class B
- VCCI Class II
- CISPR-22 Class B Immunity
- 55082-1 Generic Immunity Specification Part 1: Residential and Light Industry
- IEC 1000-4-2 (EN61000-4-2)
- IEC 1000-4-3 (ENV50140)
- IEC 1000-4-4 (EN61000-4-4)
- IEC 1000-4-5 (EN61000-4-5)
- IEC 1000-4-6 (ENV50141)
- IEC 1000-4-11
- IEC 1000-3-2 Network Homologation
- Europe: CTR2, CTR3
- Canada: CS-03
- United States: FCC Part 68
- Japan: Jate NTT
- Australia/New Zealand: TS013/TS-031
- Hong Kong: CR22



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