Cisco IP Phone 6800 Series

The Cisco® IP Phone 6800 Series is a cost-effective, high-fidelity voice communications portfolio designed to improve your organization's people-centric communications while reducing your operating costs in approved third-party hosted call control deployments.

The 6800 Series combines an attractive new ergonomic design with "always-on" reliability and secure encrypted communications. The phones deliver advanced IP telephony features and wideband audio capabilities with an easy-to-use, full-featured voice communications experience on third-party hosted call control.

The Cisco IP Phone 6800 Series introduces two phone models (one with an optional Key Expansion Module) to the Cisco Multiplatform Phone (MPP) portfolio (Figure 1):

- Cisco IP Phone 6841 with Multiplatform Firmware, supporting four lines (available in charcoal only)
- Cisco IP Phone 6851 with Multiplatform Firmware, supporting four lines (available in charcoal only)

Figure 1.   Cisco IP Phone 6800 Series: 6841 (left) and 6851 (right)

Cisco IP Phone 6800 Series product overview

The line keys on each model are fully programmable. You can set up keys to support either lines, such as directory numbers, or call features, such as speed dialing. You can also boost productivity by handling multiple calls for each directory number, using the multiple-calls-per-line appearance feature. Tricolor LEDs on the line keys support this feature and make the phone simpler to use.

Fixed function keys on all models give you one-touch access to service, messaging, directory, hold/resume, transfer, and conference features. A full-duplex speakerphone lets you set up clear multiparty conferences for flexible, productive collaboration.

The Cisco IP Phone 6800 Series maintains the same usability standards and context-sensitive user experience as the Cisco IP Phone 7800 Series. The 6841 and 6851 IP phones feature a high-resolution 3.5-inch (396x162-pixel) grayscale display with white backlighting for easy reading. Localized language support, including right-to-left onscreen text, meets the needs of global users.

The 6800 Series is also more energy-efficient and eco-friendly, to support your green initiatives. The 6851 IP phone supports Power over Ethernet (PoE) Class 2. Both the 6841 and 6851 IP phones are Energy Star certified, with a standard power-save option available to reduce power consumption during off-hours, saving money and increasing energy efficiency.

The 6800 Series is ideal for businesses that want to update their phone system from a traditional analog or digital-based system to an IP communications system with third-party hosted call control services.

Cisco IP Phone 6800 Key Expansion Module product overview

The Cisco IP Phone 6800 Key Expansion Module (KEM) extends the capabilities of the Cisco IP Phone 6851 with additional buttons. This module adds 14 physical keys along with access to 14 additional keys via the page keys, for a total of 28 additional keys. The 6851 IP phone supports one KEM only.

The 6800 KEM comes with a foot stand and cable to connect it directly to the base device in a traditional side-by-side configuration (Figure 2).

Figure 2.   Cisco IP Phone 6800 Key Expansion Module

Cisco IP Phone 6800 Series features and benefits

Table 1 lists the features and benefits of the Cisco IP Phone 6800 Series.

Table 1.   Cisco IP Phone 6800 Series features and benefits

Feature	Benefits
Hardware features	
Ergonomic design	• The phones offer an easy-to-use interface and provide a traditional telephony-like user experience.
Graphical display	• White backlit, grayscale, 3.5-in. (9-cm) 396×162-pixel display on the 6841 and 6851 models. • Scrollable access to calling features and text-based XML applications.
Handset	• The default handset is a standard audio handset (connects through an RJ-9 port) for the 6841 and 6851 models. An additional enhanced audio handset is available for purchase. • The handset is Hearing Aid Compatible (HAC) and meets Federal Communications Commission (FCC) loudness requirements for the Americans with Disabilities Act (ADA). You can meet Section 508 loudness requirements by using industry-standard inline handset amplifiers such as Walker Equipment W-10 or CE-100 amplifiers. The dial pad is also ADA compliant. • The default handset produces a magnetic field that attracts small metallic objects such as pins and staples. To avoid possible injuries, do not keep small metallic objects close to the handset.
Headset	• The analog headset jack is a standard wideband-capable RJ-9 audio port for the 6841 and 6851 models.
Backlit indicator	• The phone supports backlit indicators for the audio path keys (handset, headset, and speakerphone), select key, line keys, and message waiting.

Feature	Benefits
Volume control	• A volume-control toggle provides easy decibel-level adjustments of the handset, monitor speaker, and ringer.
Full-duplex speakerphone	• A full-duplex speakerphone gives you flexibility in placing and receiving calls. For added security, the Audible Dual-Tone Multifrequency (DTMF) tones are masked when the speakerphone mode is used.
Single-position foot stand	• The foot stand holds the phone at an angle, making the display easy to view and the buttons and keys easy to use. You can remove the foot stand for wall mounting, with mounting holes located on the back of the phone.
Wall mountable	• The phone can be installed on a wall using the optional 6800 Series wall-mount kit (available separately).
Electronic hook switch	• The hook switch can be controlled electronically with a third-party headset connected to the auxiliary port for the 6851 model only.

Keys	• The phones have the following keys:
	  ◦ Line keys
	  ◦ Soft keys
	  ◦ Two-way navigation and select keys
	  ◦ Hold/Resume, Transfer, and Conference keys
	  ◦ Messaging, Service, and Directory keys
	  ◦ Standard key pads
	  ◦ Volume control toggle key
	  ◦ Speakerphone, headset, and mute keys

Ethernet cables	• The 6841 and 6851 models support the following Ethernet cables:
	  ◦ Category 3, 5, 5e, and 6 for 10-Mbps cables with 4 pairs
	  ◦ Category 5, 5e, and 6 for 100-Mbps cables with 4 pairs
	  ◦ Category 5, 5e, and 6 for 1000-Mbps cables with 4 pairs

Power features	
IEEE PoE Class 2	• The 6851 IP phone supports IEEE 802.3af PoE (Class 2); power consumption does not exceed 6.89W.
Power adapter with country clips	• 6800 Series regional power adapters are available for powering the 6841 IP phone and for the 6851 IP phone when used in non-PoE deployments.
Cisco power injector	• The 6851 IP phone is compatible with the Cisco Unified IP Phone Power Injector (CP-PWR-INJ), and with the Cisco Aironet® Power Injector (AIR-PWRINJ5=).

Cisco IP Phone 6800 Key Expansion Module features and benefits

Table 2 lists the features and benefits of the Cisco IP Phone 6800 Key Expansion Module.

Table 2.   Cisco IP Phone 6800 Key Expansion Module features and benefits

KEM feature	Benefits
Illuminated buttons	
Off (dark)	Button is not configured
Green, steady	Programmable Line Key is configured correctly and is in the idle state
Red, steady	Programmable Line Key is in use and has an active call on it or has a parked call
Amber, flashing	A configuration error has occurred for the Programmable Line Key
Illuminated page buttons	
Off (dark)	Page not in focus
Green, steady	Page in focus
Amber, flashing	Page not in focus, with one or more alerting or on-hold calls present on page

KEM feature	Benefits
Hardware and power-saving features	
Graphical display	Two 3.5-in (9-cm) grayscale backlit LCD displays, 160 x 270 resolution
Directory-number and feature buttons	The module has 14 physical buttons (28 using page keys)
Page buttons	Use the 2 page buttons to access each page of 14 buttons and provide phone status
Power save mode	When the Cisco IP Phone 6851 is placed in power save mode, the 6800 KEM is also placed in power save mode. Pressing the select button while the phone and KEM are in power save mode will restart both the phone and the KEM

Supported features

Table 3 lists the features supported in the multiplatform phone firmware.

Table 3. Features supported in the multiplatform phone firmware

Feature	Detail
Audio	• Codecs: G.711 (A-law and μ-law), G.722.2, G.722, G.729 (a, b, ab), ILBC, iSAC, OPUS • DTMF: In-band, out-of-band (RFC 2833), and SIP INFO • MOS Score Reporting (Telchemy)
Network	• MAC address (IEEE 802.3) • SIP protocol support (RFC 3261 and companion RFCs) • IPv4 (RFC 791) • IPV6 (RFC 2460): System Interoperability Testing Required • DNS: A record (RFC 1706), SRV record (RFC 2782) • Dynamic Host Configuration Protocol (DHCP) (RFC 2131) • Simple Network Time Protocol (SNTP) (RFC 2030) • Network Address Translation (NAT) traversal, serial tunnel (STUN) • User Datagram Protocol (UDP) and TCP • Link Layer Discovery Protocol (LLDP) • Cisco Discovery Protocol • TR.69 provisioning: System Interoperability Testing Required
Security	• Certificates • Image authentication • File authentication • 802.1X authentication • Transport Layer Security (TLS) • Media encryption via Secure Real-Time Transport Protocol (SRTP) with Advanced Encryption Standard (AES-128 or AES-256) • Signaling encryption using TLS with AES-128 or AES-256 • Encrypted configuration files • Digest authentication • Password login • HTTPs secure provisioning • Mandatory/Optional Secure call
Applications	• Cisco XML Services Interface (XSI) • UC-One Presence
Call control and audio features	• Busy Lamp Field (BLF)[1] • Call back on busy • Call blocking – anonymous and selective • Call conferencing – hosted (N-party)[1] • Call conferencing – local 3-way

[1] Feature requires support by SIP client management server.

Feature	Detail
	• Call forwarding – unconditional, no answer, on busy
	• Call hold
	• Call pickup – selective and group[1]
	• Call park and unpark[1]
	• Call transfer – attended or blind
	• Call waiting
	• Caller ID name and number and outbound caller ID blocking
	• Caller ID mapping for incoming calls
	• Configurable dial/numbering plan support with inter-digit timers – per line
	• Configurable supplementary services soft keys
	• Distinctive ringing based on calling and called number
	• Do not disturb
	• Extension mobility/hot-desking[1]
	• Group paging[1]
	• Hoteling[1]
	• Intercom[1]
	• Individual volume setting per audio path (headset, handset, or speaker)
	• Multicast paging
	• Music on hold[1]
	• Outbound caller ID blocking
	• Visual voice message waiting indicator (VMWI)
	• Shared/bridge line appearance[1]
	• Supplementary services feature activation codes
Directory	• Local phonebook
	• XML/Lightweight Directory Access Protocol (LDAP) remote directory
	• Broadsoft directory
	• Intelligent search
	• Call history
	• Reverse address lookup in all directories
Management	• Configuration: Browser, phone, auto-provision
	• Auto-provision via TFTP, HTTP, or HTTPs for mass deployment
	• Packet Capture, Problem Reporting Tool (PRT) and upload of PRT

Platform support

Table 4 lists the platforms supported by the multiplatform phone firmware.

Table 4.   Supported platforms

Platforms supported	Certifications
Asterisk	Interoperability Tested – Release (1.8+)
Broadsoft	Interoperability Tested and Certified – Releases 19sp1, 20sp1, 21sp1, 22sp1
Broadcloud	Interoperability Tested and Certified
Centile	Interoperability Tested and Certified – Release Istra SP 9.2
Metaswitch	Interoperability Tested and Certified – Release 9.3

Session border controller support

Table 5 lists the session border controllers supported by the multiplatform phone firmware.

Table 5.   Supported session border controllers

Session border controllers
EdgeMarc
Metaswitch Perimeter
Oracle/Acme
Sonus 5100

Licensing

All Cisco IP Phone 6800 Series models are covered by the Cisco End User License Agreement at https://www.cisco.com/go/eula.

Product specifications

Table 6 lists the features and specifications of the Cisco IP Phone 6800 Series.

Table 6.   Features and specifications

Features	Specifications
Signaling protocol support	• Session Initiation Protocol (SIP)
Full DN lines supported	**6841: 4 lines (SIP registrations)** **6851: 4 lines (SIP registrations)**
Language support	• Bulgarian • Chinese (Simplified) • Chinese (Traditional, Hong Kong) • Croatian • Czech • Danish • Dutch • English (American) • English (United Kingdom) • Finnish • French (France) • German • Hungarian • Italian • Japanese • Korean • Norwegian • Polish • Portuguese (Portugal) • Spanish (Spain) • Slovak • Swedish • Slovenian • Turkish
Multiple ring tones	• The phones support user-adjustable ring tones
Quality-of-Service (QoS) options	• The phone supports Cisco Discovery Protocol and 802.1Q/p standards, and can be configured with an 801.1Q VLAN header containing the VLAN ID overrides configured by the admin VLAN ID

Features	Specifications
Security	• Certificates • Image authentication • Device authentication • File authentication • Signaling authentication • Media encryption using SRTP with Advanced Encryption Standard (AES)-128 • Signaling authentication • Media encryption using SRTP with Advanced Encryption Standard AES-128 or AES-256 • Signaling encryption using TLS with AES-128 or AES-256 • Encrypted configuration files • 802.1X authentication • Cryptography
Configuration options	• The user can configure the IP address assignment statically or through the DHCP client
Physical dimensions (H×W×D)	• IP Phone 6841: 8.2 x 8.1 x 1.3 in. (207 x 206 x 33 mm) (excluding foot stand) • IP Phone 6851: 8.2 x 10.4 x 1.3 in. (207 x 265 x 33 mm) (excluding foot stand) • 6800 Key Expansion Module: 8.15 x 4.45 x 1.65 in. (207 x 113 x 42 mm)
Weight	• IP Phone 6841: 22 oz (615 g) (excluding foot stand, handset, and package), 24 oz (682 g) (including foot stand, excluding handset and package) • IP Phone 6851: 22 oz (615 g) (excluding foot stand, handset, and package), 24 oz (682 g) (including foot stand, excluding handset and package) • 6800 Key Expansion Module: 11.5 oz (320 g)
Display	• IP Phone 6841 and 6851: 3.5 in. (9 cm), 396 x 162 pixels • 6800 Key Expansion Module: Two 3.5-in (9-cm) grayscale backlit LCD display, 160 x 270 resolution
Ethernet switch	• The 6841 and 6851 IP phones have a 10/100/1000BASE-T Ethernet connection through two RJ-45 ports, one for the LAN connection and the other for a downstream Ethernet device connection such as a PC
Phone and KEM casing composition	• Polycarbonate Acrylonitrile Butadiene Styrene (ABS) textured plastic
Power requirements	• The 6841 IP phone must be powered with the supplied 5V DC country-specific power supply (such as the CP-6800-PWR-NA= for North America) • The 6851 IP phone is an interoperable IEEE 802.3af PoE (Class 2) device. 5V DC is required; it can be supplied locally at the desktop using one of the optional AC-to-DC country-specific power supplies (such as the CP-6800-PWR-NA= for North America) • The 6800 Key Expansion Module has no local power supply. The KEM gets power from the attached 6851 IP phone. The attached 6851 IP phone may be powered via PoE or the 6800 (5V) power adapter
Operational temperature	• 32° to 104°F (0° to 40°C)
Nonoperational temperature shock	• 14° to 140°F (-10° to 60°C)
Humidity	• Operating 10% to 90%, noncondensing • Non-operating 10% to 95%, noncondensing
Cosmetic	• Cisco cosmetic class A

Certification and compliance	• Regulatory compliance:
	  ○ CE Markings per directives 2004/108/EC and 2014/30/EU
	• Safety:
	  ○ UL 60950 Second Edition
	  ○ CAN/CSA-C22.2 No. 60950 Second Edition
	  ○ EN 60950 Second Edition (including A11 & A12)
	  ○ IEC 60950 Second Edition (including A11 & A12)
	  ○ AS/NZS 60950
	• EMC – Emissions
	  ○ 47CFR Part 15 (CFR 47) Class B
	  ○ AS/NZS CISPR32:2015 Class B
	  ○ CISPR 32: 2015_COR1:2016 Class B
	  ○ EN55032: 2015+AC:2016
	  ○ ICES003 Class B

Features	Specifications
	◦ EN61000-3-2:2014 and IEC 61000-3-2:2014
	◦ EN61000-3-3:2013 and IEC61000-3-3:2013
	• EMC – Immunity
	◦ EN55024
	◦ CISPR24
	◦ Armadillo Light
	• Telecom
	◦ FCC Part 68 HAC
	◦ CS-03-HAC
	◦ AS/ACIF S004
	◦ AS/ACIF S040
	◦ NZ PTC 220
	◦ Industry standards: TIA 810 and TIA 920
	• Industry standards: IEEE 802.3 Ethernet, IEEE 802.3af (for CP-6851 only)

Ordering information

Table 7 gives ordering information for the phones and their accessories. All of the 6800 MPP phones support Remote Configuration (RC). It is no longer necessary to order specific "RC" SKUs to use the RC function.

Table 7.   Ordering information

Part number	Product description
CP-6841-3PW-NA-K9=	Cisco IP Phone 6841 with power adapter for North America
CP-6841-3PW-CE-K9=	Cisco IP Phone 6841 with power adapter for Europe
CP-6841-3PW-UK-K9=	Cisco IP Phone 6841 with power adapter for United Kingdom
CP-6841-3PW-AU-K9=	Cisco IP Phone 6841 with power adapter for Australia/New Zealand
CP-6851-3PCC-K9=	Cisco IP Phone 6851
CP-6851-3PW-NA-K9=	Cisco IP Phone 6851 with power adapter for North America
CP-6851-3PW-CE-K9=	Cisco IP Phone 6851 with power adapter for Europe
CP-6851-3PW-UK-K9=	Cisco IP Phone 6851 with power adapter for United Kingdom
CP-6851-3PW-AU-K9=	Cisco IP Phone 6851 with power adapter for Australia/New Zealand
CP-6800-WMK=	Spare Wall Mount Kit for IP Phone 6800 Series
CP-6800-PWR-NA=	Cisco IP Phone 6800 power adapter for North America
CP-6800-PWR-CE=	Cisco IP Phone 6800 power adapter for Europe
CP-6800-PWR-UK=	Cisco IP Phone 6800 power adapter for United Kingdom
CP-6800-PWR-AU=	Cisco IP Phone 6800 power adapter for Australia and New Zealand
CP-DX-HS-NB=	Spare Narrowband Handset for Cisco IP Phone 6800 Series
CP-DX-HS=	Optional Wideband Handset for Cisco IP Phone 6800 Series
CP-7800-HS-CORD=	Spare Handset Cord for Cisco IP Phone 6800 Series
CP-68KEM-3PCC=	Optional Cisco IP 6800 Key Expansion Module

Warranty

The Cisco IP Phone 6800 Series is covered by a Cisco one-year limited hardware warranty.

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More information

For additional details on the Cisco IP Phone 6800 Series, go to [https://www.cisco.com/c/en/us/products/collaboration-endpoints/ip-phone-6800-series/index.html]

Printed in USA

C78-739946-02   07/18