



## KAREL IP202 | IP202P IP PHONE

### IP PHONE WITH 2 LINES & HD VOICE & COLOR-SCREEN LCD

- 2 SIP Lines
- 2.4 inch (320x240) color - screen LCD
- HD Voice
- 2xLAN, POE (IP202P)
- Handset (HS) / Hands-free (HF) / Headphone (HP) Mode
- Desktop / Wall-mount installation

Karel IP202 is an IP phone offering advanced functionality and easy user interface for making interaction easier and maximizing efficiency. Operating with Karel IP PBXs and other SIP compliant products, KAREL IP202 provides uninterrupted communication in anywhere with Internet connection with its aesthetic design, full-duplex hands free feature and its other differentiating features.

#### Generic

- 2 SIP Lines
- HD Voice
- POE Enabled(IP202P)
- Handset (HS) / Hands-free (HF) / Headphone (HP) Mode (EHS support for Plantronics headsets)

- Desktop / Wall-mount installation
- Economical and Environmental friendly package
- Industrial Standard Certifications: CE/FCC

#### Call Features

- Call out / answer / reject
- Mute / unmute (microphone)
- Call Hold / Resume
- Call Waiting
- Intercom
- Caller ID Display
- Call Forwarding (Always/Busy/No Answer)
- Call Transfer (Attended/Unattended)
- Call Parking/Pick-up (depending on server)
- Redial
- Do-Not-Disturb (per line / per phone)
- Auto-Answering (per line)
- Voice Message (on server)
- Local 3-way Conference
- Hot Line

#### Phone Features

- Intelligent Phonebook (up to 500 entries total)
- Remote Phonebook (XML/LDAP)
- Intelligent Contact Number Filtering
- Call log (100 entries total, in/out/missed)

- Voice Message Waiting Indication (VMWI)
- Network Time Synchronization
- Multi-language support in screen and web UI

#### Audio

- HD Voice Microphone/Speaker (Handset/Hands-free, 0~7KHz Frequency Response)
- Wideband ADC/DAC 16KHz Sampling
- Narrowband CODEC: G.711a/u, G.723.1, G.726-32K, G.729AB
- Wideband CODEC: G.722
- Full-duplex Acoustic Echo Canceller (AEC) – Hands-free Mode, 96ms tail-length
- Voice Activity Detection (VAD) / Comfort Noise Generation (CNG)/ Background Noise Estimation (BNE) / Noise Reduction (NR)
- Packet Loss Concealment (PLC)
- Dynamic Adaptive Jitter Buffer up to 300ms
- DTMF: In-band, Out-of-Band – DTMF-Relay (RFC2833) / SIP INFO

## Networking

- Physical: 10/100Mbps Ethernet, dual bridged port for PC bypass
- IP Configuration: Static / DHCP / PPPoE
- Network Access Control: 802.1x
- VPN: L2TP (Basic Unencrypted) / OpenVPN
- VLAN
- QoS

## Protocols

- SIP2.0 over UDP/TCP/TLS
- RTP/RTCP/SRTP
- STUN
- DHCP
- PPPoE
- 802.1x
- L2TP (Basic Unencrypted)
- OpenVPN
- SNTP
- FTP/TFTP
- HTTP/HTTPS
- TR069

## Deployment & Maintenance

- Auto-Provisioning via FTP / TFTP / HTTP / HTTPS / DHCP / OPT66 / SIPPNP / TR069
- Web Management Portal
- Web-based Packet Dump
- Configuration Backup/Restore
- Auto/Manual Online Software Upgrade
- Syslog

## Physical Specifications

- LCD x1: 2.4 inch (320x240) color-screen LCD
- Keypad: 28 keys, including
  - 4 Soft-keys
  - 12 Standard Phone Digits keys
  - 5 Navigation keys
  - 2 Line keys with tri-color LED
  - 4 Function key
  - 1 Hands-free
- HD Hands-free Speaker (0 ~ 7KHz) x1
- HD Hands-free Microphone (0 ~ 7KHz) x1
- HD Handset (RJ9) x1
- Standard RJ9 Handset Wire x1
- 1.5M CAT5 Ethernet Cable x1

- RJ9 Phone Jacket x2: Handset x1, Headphone x1
- RJ45 Ethernet Jacket x2: Network x1 (802.3AF POE Class 1 Enabled), PC x1 (Bridged to Network)
- Main Chipset: Broadcom
- DC Power Input: 5V/600mA
- Power Consumption: Idle – ~ 1.1W, Peak – ~ 1.8W
- Working Temperature: 0°C ~ 40°C
- Working Humidity: 10 ~ 65%
- Dual-Functional Back Rack x1: Desktop Stand / Wall-mount
- Color: Black
- Package Dimensions: 275x215x62mm (W x H x L)

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