

crystal1A*

ACCESS GATEWAY

FEATURE-RICH TELEPHONE SERVICE THROUGH YOUR INTERNET CONNECTION



OVERVIEW

The Crystal IA Access Gateway enables high quality, feature rich telephone service through your cable or DSL internet connection. Just plug it in to your home gateway or router.

High quality, crystal clear sounding voice.

Compatible with all common telephone features, caller ID, call waiting, voice mail.

The Crystal IA offers IP telephone users superb audio quality, rich functionalities, interoperable with leading IP-PBX and Softswitch systems, and compatibility with most VoIP service providers. This is a commercial grade product designed for providers. The Crystal IA is ultra-compact, works with any PSTN or cordless phone and fax machines, and offers the simplicity of plug-and-dial, making it ideal for residential and SOHO users.

- Supports auto-provisioning with remote firmware upgrade
- Password protected access and configuration
- Web-based configuration through a built-in web server
- Supports Session Initiation Protocol (SIP)
- Supports multi voice compression
- Supports Dynamic Host Configuration Protocol (DHCP)

KEY ADVANTAGES

- Routing ability with "Built in" QoS
- Commercial Carrier grade products
- Complete Lock and Encrypt Admin (guarantees product functions only on provider network)
- Full remote provisioning with encryption
- Outstanding voice quality
- Highly competitive pricing

KEY FEATURES

- Voice Codecs: G.711, G723.1, G.729 A/B, T.38 or G.711 bypass
- Ideal IP enabler for analog phones, faxes and legacy PBX system
- VAD (Voice Activity Detection) with CNG (Comfort Noise Generation)
- PLC (Packet Loss Concealment), Dynamic Jitter Buffer L2/L3 QoS
- Web/Telnet configuration, Auto Provisioning
- PPPoE, DHCP Client/Server
- Support polarity reversal
- Call Hold, Call Waiting, Call Forward, Do not Disturb, Direct IP Calling, Blind Transfer, Attended Transfer
- G.168 Echo Cancellation

MINIMUM REQUIREMENTS

- High-speed Internet connection (cable/DSL/other)
- Broadband Router or Gateway to share internet connection
- Regular analog touch-tone telephone or fax machine
- CD-ROM drive

Specifications		Crystal 1A Access Gateway
General Information		
1.1	Product Type	SIP & MGCP VoIP Access Gateway, carrier class voice quality.
1.2	Box Type	Neutral Brown Box / Giftbox
1.3	Market Target	Design for Operator VoIP network small-to-medium size access gateway / Enterprise small-to-large access gateway / On business people.
1.4	Hardware	Carrier class hardware with embedded microprocessor, high voice quality
1.5	Software	Based on Uclinux.
1.6	Performance	Stable and High voice quality.
1.7	Cost Performance	High performance-price ratio.
1.8	Release Date	6/25/04
1.9	Current Software Version	9.50.12
1.10	Current Hardware Version	PCB 62.2
1.11	Lines Delivered	>200,000
Mechanical		
2.1	Dimension (WxDxH)	96 x 68 x 23mm
2.2	Package Size	158 x 142 x 58mm
2.3	Net Weight	0.15kg
2.4	Gross Weight	0.45kg
LEDs Indicator		
3.1	PWR	Indicates Power. Remains ON when Power is connected.
3.2	RUN	Device running LED (RUN) indicates that the device is running or not
3.3	WAN	Indicates LAN (or WAN) port activity.
3.4	LAN	Indicates PC (or LAN) port activity.
Powering		
4.1	Power Input	100-240V AC, 50-60Hz, 0.4A Max
4.2	Power Output	12V DC, 1A.
4.3	Single Power	Yes
4.4	Max power consumption	5W.
Environment - EMC		
5.1	Operational	32~104F / 0~40°C
5.2	Storage environment	-4~176F / -20~80°C
5.3	Humidity, No condensation	10~90%
5.4	Stationary use environment	EN 300 019: Class 4.1 and Class 4.2H
5.5	Storage environment	EN 300 019: Class 1.2
5.6	Transportation environment	EN 300 019: Class 2.3
5.7	Acoustic noise	EN 300 753: Rural
5.8	EMC	FCC Part 15 Class B; CE EMC directive 2004/108/EC: EN55022; 2006+A1; 2007 EN61000-3-2; 2006 EN61000-3-3; 1995+A1; 2001+A2; 2005 EN55024; 1998+A1; 2001+A2; 2003
5.9	Safety	CE LVD
5.10	Certifications	FCC, CE
5.11	Resistibility	K.20
Availability - Redundancy		
6.1	Service life time	20 years
6.2	MTBF	20 years
6.3	MTTR	5 mins
6.4	Calling Established time	<300ms
6.5	Power-on time	1 mins
6.6	Lightning protection	Protection of telephone interface against lightning strike. 10/700, 4000V
Physical Interface		
Ethernet Interface		
7.1	Number of interface	2 * 10/100 BASE-TX (RJ-45)
7.2	Auto adapted	Yes
7.3	MDIX(Auto-media-dependent interface crossover)	Yes
FXS Interface		
8.1	FXS port number	1 * FXS port
8.2	Ringing Current	Effective Value: 45V, AC, 25Hz
8.3	Feed Voltage	On hook: -48V
8.4	Feed Current	Off hook: 20mA
8.5	Transmission Distance	1 KM
8.6	Support Charge Mode	Reverse Signal
8.7	Impedance	600 Ω 900 Ω Japan (600 Ω + 1 μF) 900 Ω + 2.16 μF CTR21 270 Ω + (750 Ω 150 nF) Australia/New Zealand 220 Ω + (820 Ω 120 nF) Slovakia/Slovenia/South Africa 220 Ω + (820 Ω 115 nF) China 200 Ω + (680 Ω 100 nF)
Smart Life Line™ Interface (Intelligent PSTN Pass Through Interface)		
9.1	Smart Life Line™ (Intelligent PSTN passthrough)	1 * Smart Life Line™ ports
9.2	On-Hook Feed Voltage	-48V
9.3	Off-Hook Feed Current	>20mA
9.4	Ringing Voltage Requirement	Effective Value>45V, Sine Wave, 25Hz

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Signals & Protocols		
SIP Signaling		
10.1	Protocols compliant	SIP V2.0, RFC3261
10.2	Support SIP User ID and Password	Yes
10.3	SIP Encryption support (Private protocols, only work with ALLYWLL its own IAD and IP phones, to avoid the SIP packet is captured and discarded)	Yes
MGCP Signaling		
11.1	Protocols compliant	MGCP V1.0, RFC2705
11.2	MGCP Encryption support (Private protocols, only work with ALLYWLL its own IAD and IP phones, to avoid the MGCP packet is captured and discarded)	Optional
Voice QoS Technologies		
12.1	VAD	Yes
12.2	CNG	Yes
12.3	PLC	Yes
12.4	DJB	Yes
Voice Codec		
13.1	G.168	Yes
13.2	G.711	Yes
13.3	G.723.1	Yes
13.4	G.729A/B	Yes
13.5	PCMU	Yes
13.6	PCMA	Yes
FAX over IP		
14.1	T.38 Fax Support	Yes, up to 14.4kbps
14.2	Fax data pump	V.17, V.19, V.27ter, V.29 for T.38
DMTF Method		
15.1	DMTF(RFC2833/SIGNAL/INBAND)	Yes
Standard Services		
16.1	Call Transfer	Yes
16.2	Call Hold	Yes
16.3	Call Forward	Yes
16.4	Do-Not-Disturb(DND)	Yes
16.5	Caller ID	Bellcore Type 1 & 2, ETSI, BT, NTT, and DTMF-based CID, Caller ID display or block
Enhanced Services		
17.1	Busy Tone Prompt	When calling, the system will automatically plays busy tone prompts when there are any incoming calls(PSTN or VoIP).
17.2	PSTN&VoIP routing	User can setup: Routing PSTN or VoIP automatically/manually.
17.3	Gateway Power Off	Intelligent Judgment Mechanism: When gateway power off, calls will jump to PSTN automatically.
17.4	Network Break	Intelligent Judgment Mechanism: When network breaks, calls will jump to PSTN automatically.
17.5	Bad Network	Intelligent Judgment Mechanism: When network is bad, calls will jump to PSTN automatically.
17.6	FreeLink™ Technology (for hotbackup)	Yes.
Network Features		
18.1	Network Protocol	TCP/UDP, RTP/RTCP, HTTP, ARP/RARP, DNS, NTP, PPPoE, FTTP, TELNET, STUN.
18.3	QoS	ToS/DSCP Set for voice, data and management traffic
18.4	PPPoE Dialup	Yes
18.5	NAT	Max: 2k sessions
18.6	DNS	Yes
18.7	DHCP Server	Yes
18.8	DHCP Client	Yes
18.9	Static IP	Yes
18.10	Static Route	Max: 8
18.11	Soft Switch Config by IP	Yes
18.12	Soft Switch Config by URL	Yes
Security & Reliability		
19.1	Administrator Authentication	Support administrator authentication, to ensure the safety of resources and data.
19.2	Packet Encryption (Private protocols, only work with CrystalHDV its own IAD and IP phones, to avoid the SIP packet is captured and discarded)	Optional
19.3	FreeLink™ Technology (for hotbackup)	Yes
19.4	Anti-Block	Optional
Maintain & Upgrade		
20.1	Web Configuration	Yes
20.2	Telnet Configuration	Yes
20.3	Support Language	English, Chinese.
20.4	Firmware upgrading by TFTP	Yes
20.5	Firmware upgrading by FTP	Yes
20.6	Config file backup and upload	Yes
20.7	Config file download	Yes
20.8	Managed by M1000	Yes
Compatibility		
21.1	Compatibility	Perfect connection with other vendors SoftSwitch and SIP server, such as Cisco BTS10200, HUAWEI SoftX3000, ZTE ZXSS10, etc.