

IPX-series. All in one VoIP product.

Full feature PBX , VoIP Gateway , mini SIP IP-PBX

**IPX** IP TELEPHONY SYSTEM

Forth IPX-series is designed to be multi purposes VoIP telephony system, it can be configured to stand alone with full featured PBX supporting FXO,FXS,ISDN up to 244 ports. It can also be configured as "VoIP gateway" connecting analog/digital line to any SIP servers or IP-PBX to form an IP telephony system and it can be bundled with the built-in SIP IP-PBX software to support IP Phone for connection between branch offices. This makes the IPX a flexible system for the current TDM which also can be scalable to the future IP Telephony network.

With an unique experience in PBX products since 1988. the IPX-series can be configured to be a full feature of a TDM PBX. Starting from 20 Ports (FXO, FXS ,ISDN PRI, E&M) expandable up to 244 Ports with non-blocking interconnecting path. The IPX have a built-in extensive features that only available in hi-end PBX such as Multi-language Auto Attendant ,OGM , IVR, Voice Mail & voice recording system, Call center User Agent , ACD, Hunting group, call pickup group, least cost routing, built-in call record logging and report (SMDR) of more than 5 million calls in CompactFlash card. There are many more unique features such as built-in PMS telephone numbering table for immediate calculation of call charges. With the Check-in, check-out and mini-bar reports makes it suitable for any scales of business offices, Hotels and Resorts, it requires only an analog/digital line but still can be scalable connecting with SIP-trunk to the IP-network for more features at the lowest connecting costs.

In addition, the IPX-series can be configured to be "VoIP Gateway" connecting with FXS/FXO Analog line to the IP network such as any SIP server , Softswitch and any IP-IPX software via standard SIP protocol. With up to 30 concurrent SIP calls, but the IPX can support internal up to 244 channels. With Auto attendant OGM , IVR makes system a very cost effective to combine with TDM and IP world network.

With the built-in SIP trunking. the IPX-series can support the built-in Mini SIP server and can integrate the built-in PBX , any VoIP gateway, IP Phone or inter branch offices to form a full scalable IP-network .

The IPX-series has been developed with high reliability and excellent voltage protection , supporting long-haul , Pulse metering and Remote Line Tests. With the proven field records and the unmatched DSP voice compression algorithm making it suitable for all sizes of enterprises, carrier networks and service provider application. The IPX-series can be used in various network environment such as xDSL , broadband satellite , FTTx , leased line or cable modem with fixed IP or dynamic IP environment. In addition, it supports various voice enhancement such as VAD , CNG , Echo cancellation , T.38 Fax over IP, and a long adaptive jitter buffer (up to 300ms.) The IPX-series works well even with low speed networks or with a long delay time such as IP Satellite communication.

Product Description**PBX**

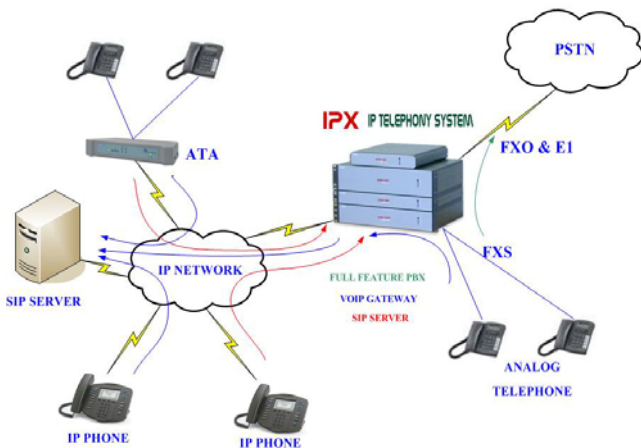
- Full feature PBX support up to 244 ports with non-blocking path.
- Support FXO,FXS,ISDN PRI, E&M
- Excellent reliability FXO,FXS, with voltage protection up to 4KV.
- Capable with Pulse metering and Polarity Reversal for Pay-phone .
- Short, Long-hual distance (up to 5.5km) with Remote Line Testing (Telcordia GR-844 standard) unique feature for telephone service provider application.
- Power supply with battery backup & charger .
- **Extensive PBX feature** , Auto Attendant , OGM, IVR , Voice mail , Call center & ACD , Least cost routing , SMDR & call log report ,Data & Voice record in CF card. Recordable wave file Music on hold, Build-in Numbering Table for calling costetc

VoIP Gateway

- The best field proven of VoIP chipsets for Voice & Data Networking
- SIP protocol compliant (RFC3261, RFC2543) support by any SIP server & softswitch,
- G.711, G.723.1 , G.726, G.727 ,G.729 , Full Rate GSM6.10 , Linear 16 bit 8Khz coder
- Voice Enhancement Features VAD, DTMF, CNG, G.168 ,T.38 Fax relay
- UpLink VoIP up to 30 concurrent channel , but support analog line up to 224 ports by time sharing and Auto Attendant / IVR feature.

mini SIP server

- up to 30 VoIP concurrent channel ,
- support any SIP IP-Phone , VoIP gateway



Models Frame

- IPX-52 Start from 4FXO/16 FXS expandable to 52 Ports (Max 12 FXO)
- IPX-116 Start from 4/16 expandable to 116 Ports (Max 28 FXO)
- IPX-180 Start from 4/16 expandable to 180 Ports (Max 44 FXO)
- IPX-244 Start from 4/16 expandable to 244 Ports (Max 60 FXO)

Interfaces Card

- IPX – CPU (CPU with VoIP Gateway WAN/LAN interface)
- IPX - POTS-816 (8 FXO , 16 FXS)
- IPX – SSL – 32 (32 FXS)
- IPX – SLL – 16 (16 FXS long-hual 5,5 km)
- IPX – E1 (1 x ISDN PRI E1)
- IPX – E&M (16 E&M)

FXO , FXS Specification :

- Signaling: Loop Start
- TU-T K.20 standard , high quality current & voltage protection (up to 4KV)
- Pulse Metering 12 / 16 KHZ Sinusoidal bursts
- Polarity Reversal
- Remote Line Testing (Telcordia GR-844 standards)
- Short or Long-hual distance (up to 18 kft or 5.5 km at 24 AWG)
- Ringing source: Internal, 5 REN
- Loop current: 20 mA

PBX Feature (Highlight):

- Up to 244 Analog / Digital ports , Non blocking connecting path
- Multi-language Auto Attendant , IVR , Audio Texts , Voice Mail , Voice recording , support standard WAV file format . (Max: concurrent 16 channel)
- ACD feature for Call center Application.
- USB Printer port.
- PMS , Call logging in CF memory card , with Build-in Numbering Table (for selected country) to immediately calculate calling cost. With Credit & Pre-paid feature.
- Call Trasfer , Call pickup group , Hunting Group ,
- Least cost routing , separate company group , Tenant group
- Programmable feature key & dial map.
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- ... and much more feature available found in hi-end PBX.

VoIP Gateway Specification :

- SIP (RFC 3261 , RFC 2543)
- SIP-Event (RFC-3265)
- SIP Proxy redundancy A-Records, DNS-SRV
- RTCP Attribute in SDP (RFC 3605)
- Disable/Enable Registrar
- RTP/RTCP (RFC 3550)
- Tone Generation (GR-506)
- Caller-ID Telcordia (Bellcore) , ETSI , NTT On hook & Off hook service (Type 1&2)
- RTP Payload for DTMF Digits, TelephonyTones and Signals (RFC 2833)

VOICE ALGORITHMS:

- G.711, G.723.1 , G.726 ,G.727 ,G.729 Annex A,B , Full Rate GSM6.10, Linear 16 bit 8Khz coder
- Echo Cancellation G.168-2002 (up to 64 ms)
- Voice Activity Detection (VAD)
- Comfort Noise Generation (CNG)
- Adaptive Jitter Buffer (up to 300ms)
- Packet Loss Concealment (PLC)
- Asymmetrical Codes (Allows upstream and downstream to use different codecs)
- AGC (Auto Gain Control), AEC (Auto Echo Cancellation)
- Voice / FAX / Modem Automatic detection and switching
- T.38 compliant , Group 3 Fax Relay up to 14.4 kbps with automatic fallback
- In-band Signaling DTMF (TIA 464B) ,
- User defined and call progress tone.
- RTP / RTCP Per RFC 3350 ,3351,2198
- DTMF Relay Per RFC 2833
- RTP Encryption 128 bit AES, Authentication MMH-AC, HMAC MD5, HMAC SHA1
- MoIP V.150.1 , VBD (Voice band data)

DATA NETWORKING

- ARP , TCP , UDP , IPV4 , ICMP , RTP , RTCP , PPPoE , DNS server / Proxy
- DHCP Client/Server , NAT , STUN , HTTP , FTP upgrade firmware

UNIVERSAL POWER :

- 120 VAC / 60 Hz or 220 VAC 50 Hz input
- Battery backup & charger support.
- Power consumption: 60 , 120 watts (typical)

ENVIRONMENTAL

Operating (system Ambient): 0 to 50° C
Humidity 8% to 95% non-condensing

About FORTH.

....FORTH have started researching, developing and producing PBX since 1989 and we are still continuing to develop Telecom products to make them the world standard produced by Thai engineer. At present we are the most acceptable and popular with top rating in local market and also in exporting to more than 20 countries.networks.

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