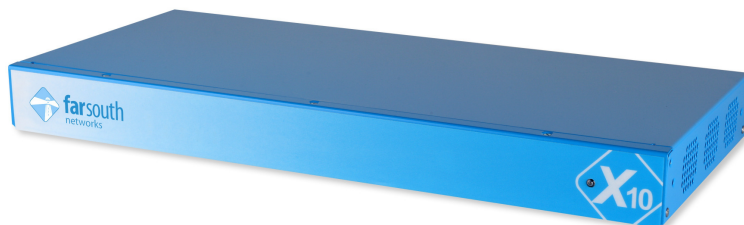


DATA SHEET

Access to a new world of feature rich, connected anywhere telephony, at low cost and low risk

Com.X10 provides a scalable and powerful telephony solution for the SMME

Com.X10(G) is a flexible and feature-rich Integrated Access Gateway solution in a single 19" rack, 1U box



Zero hardware obsolescence, optional PBX upgrade to full featured Com.X10(P) IP PBX

Feature highlights

- 1U rack-mount or desk mount unit
- SIP trunks: Order option for 30 and 60 simultaneous G.729 CODEC's
- Telephony hardware options:
 - 1 to 2 PRI, 4 to 8 BRI, 3G, LTE, X.21 ports
 - 1 PRI, 4 BRI, 16 x FXS/FXO, 3G, LTE, X.21 ports
- WAN ports: 3 Gigabit Ethernet, X.21, 3G or LTE
- Seamless expansion by means of additional rack mount Comma iTA units and an Ethernet interconnect
- Network Protocols and Services: PPP / PPPoE, HDLC, IPv4, DNS, VPN, NTP, SSH, HTTP, VLAN
- Routing: Static, NAT, NAT traversal, Port Forwarding, SIP ALG
- Firewall: Policies, Access Control Lists, Inbound/Outbound Filters, DMZ
- SIP Gateway features: Multiple "FlexPath" call routing priorities, Call Recording, B2BUA, Advanced Diagnostics, Nagios based reporting, T.38 fax, register 2 local extensions
- Budget Trunk Routing feature: Set available call minutes per month, per trunk
- QoS:
 - Network Class of Service: DSCP and 802.IP, (pending) Traffic Shaping
 - "ViBE" integration, Voipex (UK)
- PBX capacity:
 - 250+ Users: IP phone or Analogue phone POTS support
 - 30 or 60 simultaneous calls (model dependant)
 - IP phone support: Yealink, Polycom, SNOM, Siemens Gigaset, Aastra, Alcatel, and more
- PBX feature set: Yealink, snom, Polycom IP phone Auto-Provisioning, Voice Mail-to-Email, IVR, Queues, Conferences, Music on Hold, Hot Desk, "Click to Dial" integration, Class of Service calls, Call Backs, Ring Back Indication, ...
- Call Recording "Call Manager": 500,000 minutes on device, archiving to external devices
- Web-based GUI: User friendly, install and configuration "wizard"
- Remote Management: TR-069 provisioning, Nagios reporting, Backup & Restore, Call flow analysis
- TMS support: MAN3000, TNG, Aspivia-Unison, A2Billing and others
- ICASA type approval (TE-2011/020)



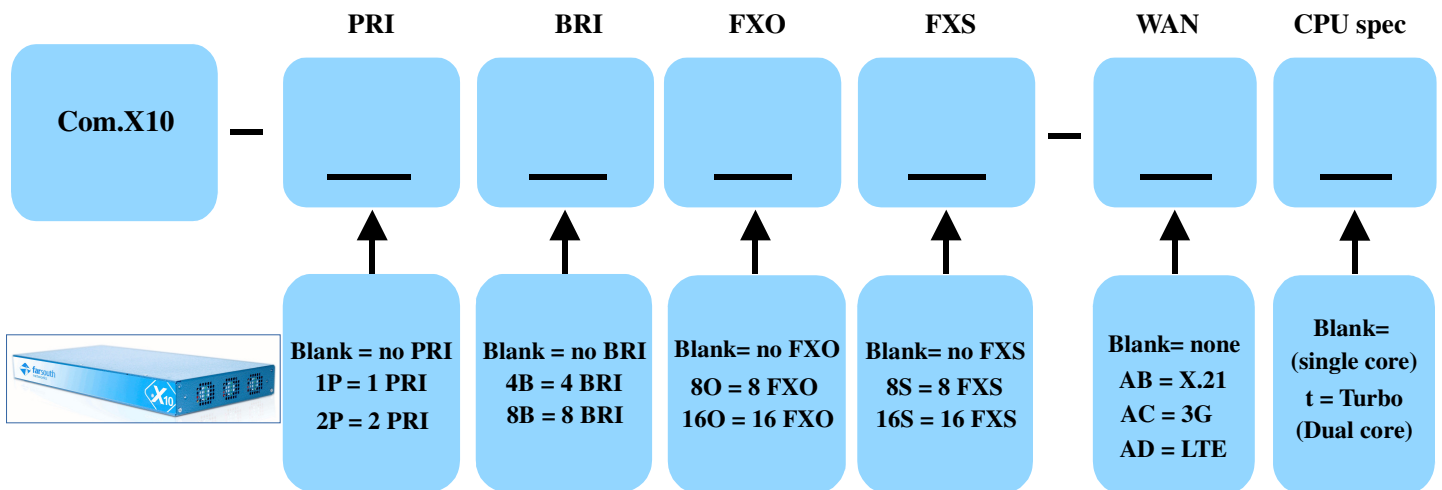
DATA SHEET

Ordering Information

Part Number Generator



The Com.X10 is modular, with the ordering code made up as follows. Not all combinations are possible.



Note:

Total FXS plus FXO ports may not exceed 16 ports per Com.X10 unit

2 PRI and 8 BRI models do not support FXO/FXS

Com.X10(G) defines SIP Gateway feature set with support for PBX license upgrade

Com.X10(P) defines a full PBX feature set available

X.21, BRI, PRI, FXS, FXO & 3G/LTE interface technical specifications within the Com.X10 "Quick Start" and "Installation Guides"

Part number examples (many other build options are available):

Com.X10(G)-8B	(30 G.729) SIP Gateway with telephony support for 8 BRI ports (TE or NT mode)
Com.X10(G)-1P-AB	(30 G.729) SIP Gateway with telephony support for 1 PRI (TE or NT mode), X.21
Com.X10(G)-2P-t	(60 G.729) SIP Gateway with telephony support for 2 PRI (TE or NT mode)
Com.X10(P)-16O-AD	(30 G.729) PBX with telephony support for 16 FXO, LTE
Com.X10(P)-4B8O8S	(30 G.729) PBX with telephony support for 4 BRI, 8 FXO, 8 FXS
Com.X10(P)-1P16S-ADt	(60 G.729) PBX with telephony support for 1 PRI, 16 FXS, LTE



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Technical Specifications

Host Processing Platform	Com.X10 (Standard)	Com.X10-t (Turbo)
CPU	Intel Atom D425, single core, 1.6 GHz	Intel Atom D525, dual core, 1.6GHz
Memory	1MB 800MHz DDR3	2MB 800MHz DDR3
Storage	60GB SATA SSD / dual s/w RAID 500GB HDD (optional)	
I/O Ports	3 x GbE LAN (2 x GBE for 2PRI & 8 BRI), 2 x USB 2.0, 1 x RS-232	
WAN ports	3G/LTE, WiFi, X.21 sync serial	
Operating System	Ubuntu Linux 10.04 LTS	

Telephony Interfaces (per unit)

	Primary Rate	Basic Rate	Analog (FXS)	Analog (FXO)
Voice Ports	30 or 60 (E1)	8, 16	8, 16	8, 16
Note: Telephony port expansion supported via connection of Comma iTA units				
Physical	RJ-45	4 x RJ-45	RJ-11	RJ-11
Electrical	E1/G.703 120Ω T1/G.703 100Ω	S/T TE or S/T NT (software selection)	Zone dependent, software programmable DC and AC characteristics. Balanced sinusoidal ringing (3 REN)	Zone dependent, software programmable impedance matching.
Protection	Power cross Inter-building	-	Power cross Inter-building	Power cross Inter-building
Conformance	TBR 4	TBR 3		TE-001 (Country-dependent)

Voice Features

Echo Cancellation	Hardware based G.165 type adaptive echo cancellation per channel Up to 64 channels at 16 ms or 32 ms Up to 32 channels at 64 ms (Up to 64 channels at 64ms for 2 PRI models)			
Hardware Codecs	-	-	G.711 A-law or μ -law	G.711 A-law or μ -law
Software Codecs	G.711, G.726, iLBC, GSM G.729A (optional with license purchase)			
Fax and Modem	Packet-network synchronization and G.711 provide transparent fax/modem support			

Signalling

Signaling System	ISDN PRI - ETSI ISDN PRI - NI-2 E1-CAS T1-CAS	ISDN BRI – ETSI ISDN BRI - NI-2	Loop-start DTMF	Loop-start DTMF
Other Features	Configurable network clock synchronization	Configurable network clock synchronization	Caller ID transmission Hook flash Distinctive ring	Caller ID reception

Packet Interfaces

VoIP	SIP + RTP IAX2 + RTP
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Administration

Management	Web based GUI, including platform backup and restore
Logging	Log (with configurable levels)
Field upgrade	Application and firmware remote update from hosted repository
Call Detail Records	MySQL database for CDR

Physical Characteristics

Power	12VDC, 5A via external AC/DC adapter (supplied)
Environmental	0°C - 40°C
Dimensions	427mm x 200mm x 43mm
Mounting	Desktop or 1U rack mount (mounting kit supplied)

Certification

Safety	IEC 60950-1:2001 & SANS 60950-1:2003
EMC	CISPR22 Class A
Other	TBR3, TBR4, ICASA TE-001 (South Africa)



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Refer to Com.X PBX and IAG brochures and Com.X Administrators Guide for feature set specification, available at: <http://farsouthnet.com/support/manuals/>

Gateway Feature Set

The short list of features provided below is common across all Com.X(G) platforms:

SIP Gateway Features		
<ul style="list-style-type: none"> Remote Management: <ul style="list-style-type: none"> Monitoring & Diagnostics Backup and restore Call flow analysis 	<ul style="list-style-type: none"> Call Recording Manager: <ul style="list-style-type: none"> 128GB SSD: 500,000min (.wav) 500GB HDD: "near unlimited" 	<ul style="list-style-type: none"> Security: <ul style="list-style-type: none"> Firewall policy Access Control lists In/Outbound filter DMZ
<ul style="list-style-type: none"> Networking (DHCP, DNS, NTP, HTTP, VPN, SSH, VLAN) 	<ul style="list-style-type: none"> Routing: Static, NAT, Forwarding, SIP ALG 	<ul style="list-style-type: none"> TR-069 provisioning
<ul style="list-style-type: none"> B2BUA mode 	<ul style="list-style-type: none"> SIP / (TCP or UDP) and IAX2 trunks 	<ul style="list-style-type: none"> QoS: DSCP and 802.1P
<ul style="list-style-type: none"> SIP proxy registration 	<ul style="list-style-type: none"> Trunk to Trunk routing 	<ul style="list-style-type: none"> QoS: ViBE management
<ul style="list-style-type: none"> Register 2 phones (emergency calls) 	<ul style="list-style-type: none"> Outbound route configuration (LCR) and multi-level trunk fail-over 	<ul style="list-style-type: none"> Diagnostics tools: SIPp and Wireshark
<ul style="list-style-type: none"> Fail2Ban security module 	<ul style="list-style-type: none"> Budget Trunk Router (minutes/month based routing) 	<ul style="list-style-type: none"> T.38 fax
	<ul style="list-style-type: none"> Nagios: Platform monitor & Reporting 	

PBX Feature Set

Inclusive of the SIP Gateway features listed above, Com.X(P) PBX short list feature set includes:

PBX Features		
<ul style="list-style-type: none"> Analogue and IP phone configuration 	<ul style="list-style-type: none"> Announcements, Paging and Intercom 	<ul style="list-style-type: none"> Ring groups & Queues
<ul style="list-style-type: none"> IP-phone support: SNOM, Yealink, Polycom, Gigaset, Aastra and more... 	<ul style="list-style-type: none"> Music on Hold (uploaded and streaming) 	<ul style="list-style-type: none"> Outlook integration ("Click to Dial")
<ul style="list-style-type: none"> Yealink, SNOM & Polycom IP Phone auto-configuration from spreadsheet 	<ul style="list-style-type: none"> Feature Codes & Pin Sets 	<ul style="list-style-type: none"> Ring Back indication
<ul style="list-style-type: none"> Unlimited voice mail & voice mail to email 	<ul style="list-style-type: none"> UPS (Proline) management 	<ul style="list-style-type: none"> Skype Connect
<ul style="list-style-type: none"> Conferencing 	<ul style="list-style-type: none"> Auto-attendant / IVR (English South African dialect) 	<ul style="list-style-type: none"> Blocking extensions & trunks, Call time limits
<ul style="list-style-type: none"> Listening in on calls – "spy" feature 	<ul style="list-style-type: none"> Call back 	<ul style="list-style-type: none"> Hot-desk support
<ul style="list-style-type: none"> Parking lots & Directed Pick-ups 	<ul style="list-style-type: none"> Camp-on "Call Back" 	<ul style="list-style-type: none"> Follow me and Divert
<ul style="list-style-type: none"> "Flexpath" routing: <ul style="list-style-type: none"> Class of Service Partitioning / Multi-tenant Trunk to trunk Gateway 	<ul style="list-style-type: none"> Inbound route configuration (Conferences, Day/Night, Ring Groups, Voice mail, IVR, Phonebook) 	<ul style="list-style-type: none"> Operator Panel (FOP2): 15 users free, unlimited users with license update
<ul style="list-style-type: none"> E-mail support (voice mail & alerts) 	<ul style="list-style-type: none"> Parking lots & Directed Pick-ups 	<ul style="list-style-type: none"> Call Barging
<ul style="list-style-type: none"> Voice mail blasting 	<ul style="list-style-type: none"> Immediate dialling 	<ul style="list-style-type: none"> Directory / Phonebook
<ul style="list-style-type: none"> Day / Night mode 	<ul style="list-style-type: none"> Directed Pickup 	<ul style="list-style-type: none"> Number transformation
<ul style="list-style-type: none"> DISA support 	<ul style="list-style-type: none"> HTTP Dialer ("Click to dial" integration) 	