

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) Integrated Access Gateway is a flexible and powerful network access platform

X10(P) IP PBX provides Unified Communications & Collaboration facilities for up to 450 users



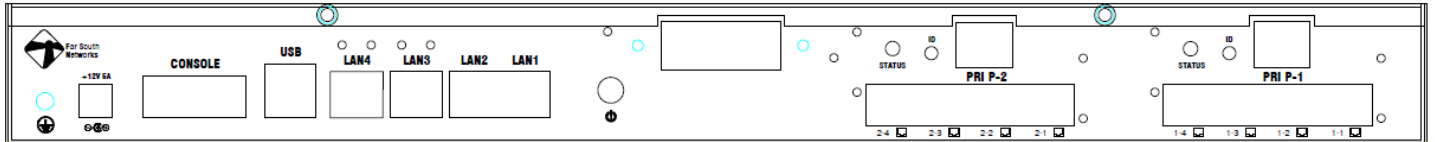
Feature highlights

- 1U * 19" rack-mount format
- SIP trunks: Order option for 30, 60, 90 & 120 simultaneous G.729a CODEC's
- WAN ports: 4, 6, 8 Gigabit Ethernet
- Fixed Mobile Access: 1 * LTE (cat 4 or cat 6, Advanced)
- Telephony hardware options: 1 to 4 PRI, 4 to 8 BRI, 4 to 8 FXS/FXO ports
- Port Expansion: Simply add one or more Comma iTA units via Ethernet LAN
- 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: B2B User Agent, Call Recording, Announcements, T.38 fax, register 2 local extensions
- QoS:
 - Network Class of Service: DSCP and 802.1P, (pending) Traffic Shaping
 - "ViBE" integration, Voipex (UK)
- PBX capacity:
 - 450 Users: IP phone or Analogue phone POTS support
 - 30, 60, 90 & 120 simultaneous calls (model dependant)
- IP phone support: Auto-provisioning for Yealink, Polycom, snom, Escene and Alcatel Temporis
- PBX feature set: Voice Mail-to-Email, Auto-Attendant, Queues, Conferences, Music on Hold, Hot Desk, and more...
- Call Recording "Call Manager": 250,000 minutes on device
- Web-based GUI: User friendly, install and configuration "wizard" with configuration backup & restore
-  wanderweb.net ready:
 - Connect: Web based NOC as a Service (device ID, connect & monitor)
 - Talk: UC&C via user-based BYOD
- TMS support: MAN3000, Aspivia-Unison and others
- ICASA type approval (TE-2011/020)

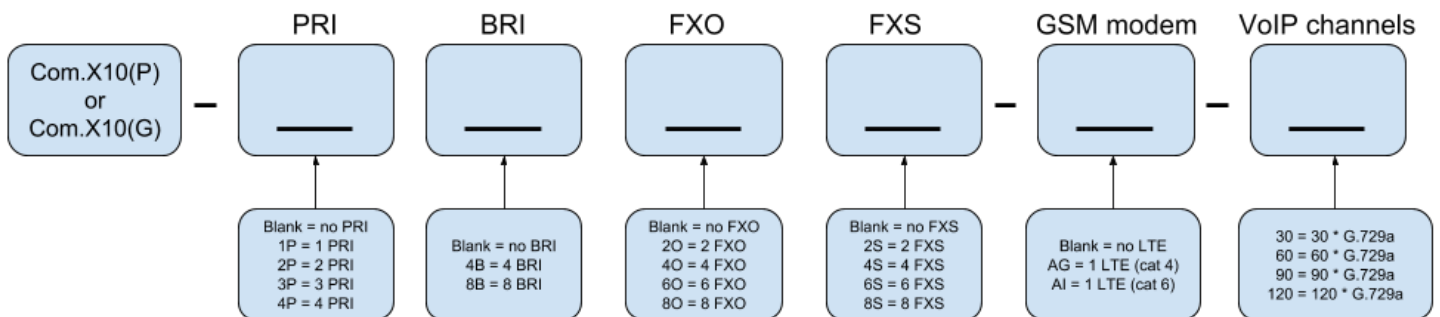
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Ordering Information

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 8 ports per Com.X10 unit

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 technical specifications within the Com.X10 “Quick Start” and “Installation Guides”

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

Com.X10(G)-SX-30	(30 G.729) SIP Gateway (IP only “soft switch”)
Com.X10(G)-SX-AI-30	(30 G.729) SIP Gateway (IP only “soft switch”), LTE cat 6
Com.X10(G)-8B-30	(30 G.729) SIP Gateway with 8 BRI ports (TE or NT mode)
Com.X10(G)-IP-AG-30	(30 G.729) SIP Gateway with 1 PRI (TE or NT mode), LTE cat 4
Com.X10(G)-2P-60	(60 G.729) SIP Gateway with 2 PRI (TE or NT mode)
Com.X10(G)-4P-120	(120 G.729) SIP Gateway with 4 PRI (TE or NT mode)
Com.X10(P)-SX-30	(30 G.729) PBX (IP only “soft switch”)
Com.X10(P)-IP4B2O2S-30	(30 G.729) PBX with 1 PRI, 4 BRI, 2 FXO, 2 FXS interfaces
Com.X10(P)-8O-AI-30	(60 G.729) PBX with 8 FXO, LTE cat 6
Com.X10(P)-2P-60	(60 G.729) PBX with 2 PRI (TE or NT mode)
Com.X10(P)-2P8S-60	(60 G.729) PBX with 2 PRI (TE or NT mode), 8 FXS

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Technical Specifications

Host Processing Platform	Com.X10
CPU	Intel Bay Trail N2930 CPU
Memory	4MB DDR3
Storage	128GB MSATA SSD (Optional dual RAID 1TB HDD)
I/O Ports	3 x GbE LAN (or 2 x GBE for 2PRI models), 2 x USB 2.0, 1 x RS-232
WAN ports	X.21 sync serial
Operating System	Ubuntu Linux 12.04 LTS

Telephony Interfaces (per unit)				
	Primary Rate	Basic Rate	Analog (FXS)	Analog (FXO)
Voice Ports	30 or 60 (E1)	8, 16	2, 4, 6, 8	2, 4, 6, 8
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			

Signaling				
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 WebRTC

RF Interfaces (FMC)		
	LTE category 6 (Advanced)	LTE category 4
Antenna Geometry	Dual Rx diversity	Dual Rx diversity
Antenna connector	2 * SMA(F)	2 * SMA(F)
Antenna gain (Omni-850)	2.5dBi	2.5dBi
Frequency range	690MHz – 2700MHz	690MHz – 2700MHz
Polarisation	Linear Vertical	Linear Vertical
SIM slot	Micro SIM	Micro SIM
GSM Frequencies	900 / 1800MHz	900 / 1800MHz
WCDMA bands	1, 3, 5, 8	1, 5, 8
LTE bands	1, 3, 5, 7, 8, 20, 26, 28, 38, 40, 41	1, 3, 5, 7, 8, 20, 38, 40, 41
Carrier Aggregation	2	Non
FDD	50Mbps (UL), 300Mbps (DL)	50Mbps (UL), 150Mbps (DL)
TDD	28Mbps (UL), 266Mbps (DL)	35Mbps (UL), 130Mbps (DL)

Com.X10

Complete communications solution in a box



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GSM	LTE cat 6, WCDMA 3GPP DC-HSDPA	LTE cat 4, WCDMA 3GPP DC-HSPA+
Modulation	QPSK, 16-QAM, 64-QAM	QPSK, 16-QAM, 64-QAM
Approvals	ICASA pending (Quectel EP06E – mPCIe)	ICASA TA-2017/2652 (Quectel EC25E – mPCIe)
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: 250,000min (.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"> Wanderweb.CONNECT ready
<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"> Atmos "Call Recording" compatible
<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

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 & IP phone configuration 	<ul style="list-style-type: none"> Wanderweb TALK ready: UC&C <ul style="list-style-type: none"> Directory, Presence IM & Group Collaboration HD Voice 	<ul style="list-style-type: none"> Inbound route configuration (Conferences, Day/Night, Ring Groups, Voice mail, IVR, Phonebook)
<ul style="list-style-type: none"> Yealink, SNOM & Polycom IP Phone auto-configuration from spreadsheet 	<ul style="list-style-type: none"> I-Number support 	<ul style="list-style-type: none"> Outlook integration ("Click to Dial")
<ul style="list-style-type: none"> Web based "Click to Call" – HTML integration 	<ul style="list-style-type: none"> Active Call Notification (& History) 	<ul style="list-style-type: none"> Blocking extensions & trunks, Call time limits
<ul style="list-style-type: none"> Unlimited voice mail & voice mail to email 	<ul style="list-style-type: none"> Music on Hold (uploaded and streaming) 	<ul style="list-style-type: none"> HTTP Dialler ("Click to dial" integration)
<ul style="list-style-type: none"> Conferencing 	<ul style="list-style-type: none"> Feature Codes & Pin Sets 	<ul style="list-style-type: none"> Ring groups & Queues
<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"> Auto-attendant / IVR (English South African dialect) 	<ul style="list-style-type: none"> Operator Panel & User HUD: 15 users. License upgrade for unlimited users
<ul style="list-style-type: none"> E-mail support (voice mail & alerts) 	<ul style="list-style-type: none"> Announcements, Paging and Intercom 	<ul style="list-style-type: none"> Call Barging
<ul style="list-style-type: none"> Voice mail blasting 	<ul style="list-style-type: none"> UPS (Proline) management 	<ul style="list-style-type: none"> Directory / Phonebook
<ul style="list-style-type: none"> Day / Night mode 	<ul style="list-style-type: none"> Parking lots & Directed Pick-ups 	<ul style="list-style-type: none"> Directed Pickup
<ul style="list-style-type: none"> DISA support 	<ul style="list-style-type: none"> Immediate dialling 	<ul style="list-style-type: none"> Ring Back indication