



### DATA SHEET

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

**Com.X20 provides a scalable and powerful telephony solution for the Enterprise Business**

**Com.X20(G) is a flexible and feature-rich Integrated Access SIP Gateway solution in a 19" rack mount format**

**Zero hardware obsolescence, optional PBX upgrade to full featured Com.X20(P) IP PBX**



### Feature highlights

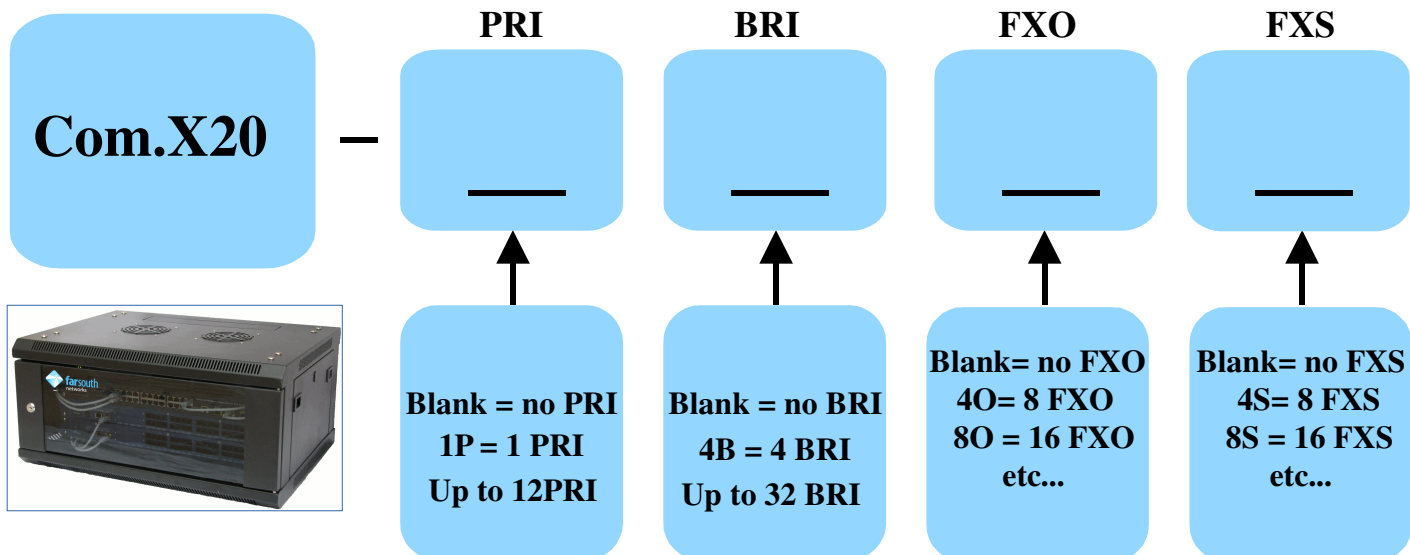
- Packaging: Multiple 1U \* 19" rack mount OR optional 4U wall mount rack
- SIP trunks: up to 360 simultaneous G.729a CODEC's
- Base system supports 1 to 12 PRI and/or 8 to 16 BRI and many 100's FXS / FXO ports
- Seamless expansion by means of additional rack mount Comma iTA units and an Ethernet interconnect
- Network Protocols and Services: PPP / PPPoE, HDLC, IPv4, DNS, VPN, NTP, SSH, HTTP, VLAN
- Routing: Static, NAT, NAT traversal, SIP ALG, Port Forwarding
- Firewall: Policies, Access Control Lists, Inbound/Outbound Filters, DMZ
- SIP Gateway features: Multiple "FlexPath" call routing priorities, Call Recording, B2BUA, 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 802.1P, (pending) Traffic Shaping
  - "ViBE" integration, Voipex (UK)
- PBX capacity:
  - 1000+ Users: IP phone or Analogue phone POTS support
  - 360 simultaneous calls
  - IP phone support: Yealink, Polycom, SNOM, Siemens Gigaset, Aastra, Alcatel
- PBX feature set: Yealink, SNOM & Polycom 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": 1,000,000+ minutes on device, archiving to external devices
- Web-based GUI: User friendly, install and configuration "wizard"
- Advanced Diagnostics: SIPp, Wireshark
- Remote Management: TR-069 provisioning, Nagios reporting, Backup & Restore, Call flow analysis
- TMS support: MAN3000, TNG, Unison, Aspivia, A2Billing and others
- ICASA type approval (TE-2009/023)

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## Ordering Information

### Part Number Generator

The Com.X20 is modular, with the ordering code made up as follows. Not all combinations are possible.



### Note:

Com.X20 platforms support a near unlimited number of PRI, BRI, FXO and FXS ports

Com.X20(G) SIP Gateway feature set support with support for PBX license upgrade

Com.X20(P) defines a full PBX feature set available

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

<b>Com.X20(G)-16B</b>	(360 G.729) SIP Gateway with telephony support for 16 BRI
<b>Com.X20(G)-4P</b>	(360 G.729) SIP Gateway with telephony support for 4 PRI
<b>Com.X20(G)-12P</b>	(360 G.729) SIP Gateway with telephony support for 12 PRI
<b>Com.X20(P)-8B64S</b>	(360 G.729) IP PBX with telephony support for 8 BRI and 64 FXS
<b>Com.X20(P)-2P240S</b>	(360 G.729) IP PBX with telephony support for 2 PRI and 240 FXS

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## Technical Specifications

Host Processing Platform				
CPU	Available options include: Intel Core i7-3612QE			
Memory	8GB DDR3 1333MHz			
Storage	128GB SSD or Dual RAID 500GB SATA HDD			
I/O Ports	4 x GbE 6 x USB 2.0, 1 x RS-232			
Operating System	Ubuntu Linux 10.0.4 LTS			
Telephony Interfaces				
	Primary Rate	Basic Rate	Analog (FXS)	Analog (FXO)
Voice Ports	30, 60, 90, 120, ... (E1)	8, 16, ...	4, 8, 16 ... 256	4, 8, 16 ... 256
Physical	RJ-45	4 / 8 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		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			
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			
Administration				
Management	Web based GUI, including platform backup and restore			
Logging	Log (with configurable levels)			
Field upgrade	Application and firmware remote upgrade from hosted repository			
Call Detail Records	MySQL database for CDR			
Physical Characteristics				
Power	220V, 50Hz & 12VDC, 5A via external AC/DC adapter (supplied)			
Environmental	0°C - 40°C			
Dimensions	427mm x 200mm x 43mm			
Mounting	Desktop, rack mount (mounting kit supplied)			
Certification				
Safety	IEC 60950-1:2001 & SANS 60950-1:2003			
EMC	CISPR 22 Class A (emissions) & IEC 61000-4-3 (immunity)			
Other	TBR 3, TBR 4, 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"> <li>Remote Management:                             <ul style="list-style-type: none"> <li>Monitoring &amp; Diagnostics</li> <li>Backup and restore</li> <li>Call flow analysis</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>Call Recording Manager:                             <ul style="list-style-type: none"> <li>128GB SSD: 500,000min (.wav)</li> <li>500GB HDD: "near unlimited"</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>Security:                             <ul style="list-style-type: none"> <li>Firewall policy</li> <li>Access Control lists</li> <li>In/Outbound filter</li> <li>DMZ</li> </ul> </li> </ul>
<ul style="list-style-type: none"> <li>Networking (DHCP, DNS, NTP, HTTP, VPN, SSH, VLAN)</li> </ul>	<ul style="list-style-type: none"> <li>Routing: Static, NAT, Forwarding, SIP ALG</li> </ul>	<ul style="list-style-type: none"> <li>TR-069 provisioning</li> </ul>
<ul style="list-style-type: none"> <li>B2BUA mode</li> </ul>	<ul style="list-style-type: none"> <li>SIP / (TCP or UDP) and IAX2 trunks</li> </ul>	<ul style="list-style-type: none"> <li>QoS: DSCP and 802.IP</li> </ul>
<ul style="list-style-type: none"> <li>SIP proxy registration</li> </ul>	<ul style="list-style-type: none"> <li>Trunk to Trunk routing</li> </ul>	<ul style="list-style-type: none"> <li>QoS: ViBE management</li> </ul>
<ul style="list-style-type: none"> <li>Register 2 phones (emergency calls)</li> </ul>	<ul style="list-style-type: none"> <li>Outbound route configuration (LCR) and multi-level trunk fail-over</li> </ul>	<ul style="list-style-type: none"> <li>Diagnostics tools: SIPp and Wireshark</li> </ul>
<ul style="list-style-type: none"> <li>Fail2Ban security module</li> </ul>	<ul style="list-style-type: none"> <li>Budget Trunk Router (minutes/month based routing)</li> </ul>	<ul style="list-style-type: none"> <li>T.38 fax</li> </ul>
	<ul style="list-style-type: none"> <li>Nagios: Platform monitor &amp; Reporting</li> </ul>	

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

**Com.X20**

**The Enterprise Communication Solution**



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