

DATA SHEET

Secure Business Communications

Any Device, Any Place


Provides enterprise class Unified Communications service for small offices environments

Secure, quality multimedia services via any internet enabled device (BYOD)

Multiple access technologies: Telco, SIP, WebRTC



Features

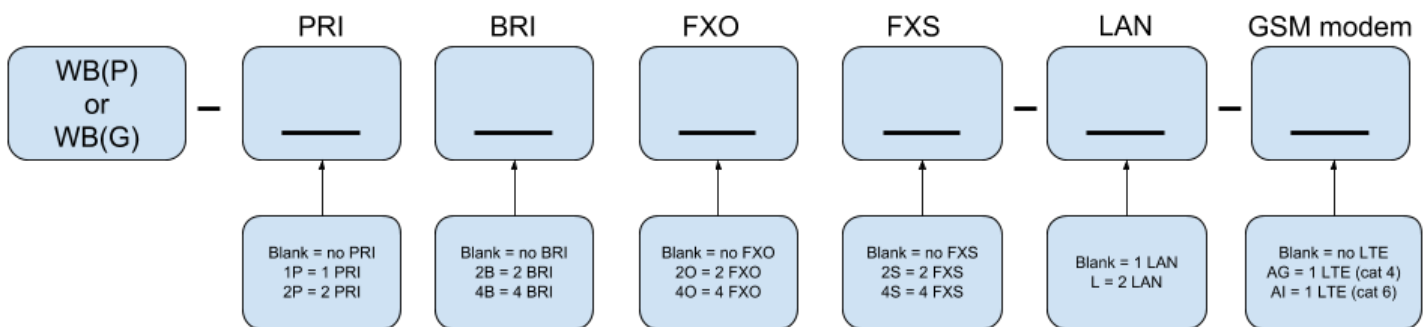
- Desk mount unit
- SIP trunks: 4 * G.729a CODEC's (upgradable to 8, 12, 16, 24, ... 32)
- Telephony hardware:
 - 0, 2, 4 Analogue (FXS or FXO)
 - 2 or 4 Basic Rate ISDN (TE or NT mode)
 - 1 or 2 Primary Rate ISDN (TE or NT mode)
- WAN ports:
 - 1 Ethernet, 2 * USB2.0 (1 * OTG / Host, 1 UART)
 - 1 LTE (cat 4 or 6)
- LAN: WiFi Access Point or Client
- Network Protocols and Services: PPP & PPPoE, HDLC, IPv4, DNS, VPN, VLAN, NTP, SSH, HTTPs
- 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, register 2 PBX extensions
- QoS:
 - Enhanced Class of Service: DSCP and 802.11p
 - "ViBE" integration, www.voipex.co.uk
- PBX capacity:
 - 50+ Users: IP phone or Analogue phone POTS support
 - 4 simultaneous calls (upgradable to 8, 12, 16, 24, ...32)
- IP phone support: Auto-provisioning for Yealink, Polycom, snom, Escene
- PBX feature set: Voicemail-to-Email, Auto-Attendant, Queues, Conferences, Music-on-Hold, and more ...
- Call Recording "Call Manager": 30,000 minutes on device (expand via 32GB or 64GB mini SD card)
- Web-based GUI: User friendly, install and configuration "wizard"
-  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-2016/068

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Ordering Information

Part Number Generator

The Wanderbox is modular, with the ordering code made up as follows.



Note:

WB(G) defines SIP Gateway feature set support, with optional PBX license upgrade

WB(P) defines a full PBX feature set available

PRI, BRI, FXS, FXO, WiFi interface technical specifications Wanderbox "Quick Start and Installation Guide"

Example part number variants (other options are available)

| | |
|--------------------|---|
| WB(P)-SX | IP PBX (IP only), 1 Ethernet |
| WB(P)-SX-L | IP PBX (IP only), 2 Ethernet |
| WB(G)-2O2S | SIP Gateway with support for 2 FXO, 2 FXS (incl 2FXO<-> 2FXS by-pass), 1 Ethernet |
| WB(P)-4O | IP PBX with support for 4 FXO, 1 Ethernet |
| WB(G)-4S | SIP Gateway, with support for 4 FXS, 1 Ethernet |
| WB(P)-2B | IP PBX, with support for 4 FXS, 1 Ethernet |
| WB(P)-1P | IP PBX with support for 1 PRI, 3 Ethernet |
| WB(P)-SX-AG | IP PBX with support for 1 Ethernet, LTE (cat 4) |
| WB(G)-2P | SIP Gateway with support for 2 PRI (incl PRI <-> PRI by-pass), 3 Ethernet |
| WB(G)-SX-AI | SIP Gateway with support for 1 Ethernet, LTE (cat 6) |

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Technical Specifications
Host Processing Platform

| | |
|------------------|---|
| CPU | ARM Cortex-A53 Quad Core, 1.6GHz |
| Memory | 2GB DDR3 |
| Storage | 8GB NAND Flash, 16GB uSD |
| I/O Ports | 2 * USB 2.0 (1 * OTG / Host, 1 * UART) |
| WAN ports | IEEE802.11b/g/n, Bluetooth, 10/100Base-Tx (RJ45), IR, (optional) LTE-Advanced |
| Operating System | Ubuntu Linux 16.04 LTS |

Telephony Interfaces (per unit)

| | Primary Rate | Basic Rate | Analog (FXS) | Analog (FXO) |
|---|--------------------------------|--|--|---|
| Voice Ports | 30 or 60 (E1) | 0, 4 | 0, 2, 4 | 0, 2, 4 |
| 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 | TBR3 | | TE-001 (Country-dependent) |

Voice Features

| | | | | |
|-------------------|---|---|---------------------------|---------------------------|
| Echo Cancellation | Hardware based G.165 type adaptive echo cancellation per channel Up to 32 channels at 16 ms or 32 ms Up to 16 channels at 64 ms | | | |
| Hardware Codecs | - | - | G.711 A-law or μ -law | G.711 A-law or μ -law |
| Software Codecs | G.711, OPUS, GSM, G.729A G.726, G.723, iLBC, SPEEX | | | |
| Fax and Modem | Packet-network synchronization and G.711 provide transparent fax/modem support | | | |

Signaling

| | | | | |
|------------------|--|--|--|---------------------|
| Signaling System | ISDN PRI - ETSI ISDN PRI - NI-2 | 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 | WebRTC 1.0 SIP + RTP IAX2 + RTP |
|------|---------------------------------------|

RF interfaces (FMC)
LTE category 6 (Advanced)
LTE category 4

| | 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) |
| 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) |

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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, 2.5A via external AC/DC adapter (supplied) |
| Environmental | 0°C - 45°C |
| Dimensions | 127mm x 130mm x 25mm |
| Mounting | Desktop |
| Certification | |
| Safety | IEC 60950 |
| EMC | CISPR22 Class B |
| Other | TBR3, TBR4, ICASA TE-001 (South Africa) |

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Refer to Wanderbox 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"> Wanderweb CONNECT – Web based device managed services | <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"> Call Recording Manager: 40,000min (.gsm) |
| <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"> TOS/COS: DSCP, 802.11p |
| <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 |
| <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 (call minutes per month) | <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"> Yealink, SNOM & Polycom IP Phone auto-configuration from spreadsheet | <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"> Outlook integration (“Click to Dial”) | <ul style="list-style-type: none"> I-Number support | <ul style="list-style-type: none"> Active Call Notification (& History) |
| <ul style="list-style-type: none"> Web based “Click to Call” – HTML integration | <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"> Unlimited voice mail & voice mail to email | <ul style="list-style-type: none"> Music on Hold – Up to 5 sources (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"> Calendar Integration (Google & Outlook) <ul style="list-style-type: none"> Individual & Group events linked to PBX services & call routing | <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 |