



Far South Networks / Xorcom

Technology Comparison

White Paper

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Document History

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1 Introduction

1.1 Overview

Far South Networks offers the Comma/Com.X product range that competes with the Xorcom products in various segments, and has significant overlap both in feature set and in open-source technology base. However, Far South Networks has unique technology that differentiates it from Xorcom and offers significant advantages.

This paper describes the approach taken by Far South Networks to solve some of the challenges associated with building scalable, flexible open-source based telephony solutions and how it contrasts with that of Xorcom.



2 Technology Comparison

2.1 Feature Comparison

The Far South Networks Com.X1 is compared with the Xorcom XR-1000 and XR-2000 models in the table below.

| | Xorcom XR-1000 | Xorcom XR-2000 | Far South Networks Com.X1 |
|------------------------------|--------------------------------------------------------------------|-----------------------|------------------------------------------------------------------------------------------------------------------------|
| OS | Linux (CentOS) | | Linux (Debian/Ubuntu) |
| Other OSS | Asterisk DAHDI mISDN Elastix Trixbox | | Asterisk DAHDI mISDN FreePBX |
| End User GUI | Elastix/Trixbox | | FSN Comma GUI provides easy to use high level GUI to decouple Asterisk/FreePBX issues from user (see screenshot below) |
| Interconnection Architecture | USB 2.0 | | Ethernet 100Base-T via Ethernet Streaming Interconnect |
| Scalability | USB imposes limits on scale of system and on physical architecture | | Only processor capacity limits scale of system |
| Deployment | Limited by short USB cable lengths | | Large scale deployments possible using fibre and wireless Ethernet |
| Full Asterisk Integration | Yes, DAHDI channels | | Yes, DAHDI channels |
| Echo Cancellation | Software EC via OSLEC | | Hardware echo cancellation up to 64 ms (512 taps) per channel |
| CPU | Via Eden 400MHz | Intel Celeron 1.3 GHz | Via C7 1.5 GHz |
| Storage | 4 GB Flash Disk | 120 GB HDD | 160 GB 2.5" HDD Optional: (internal) Compact Flash module |
| RAM | 512 MB | 1 GB | 1 GB (4GB maximum) |
| Size | 1U 19" | 2U 19" | 1U 19" |



| | Xorcom XR-1000 | Xorcom XR-2000 | Far South Networks Com.X1 |
|--------------------------------------------------------|------------------------|---------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Max. power consumption | 75W | 230W | 60W |
| Max internal analog+BRI ports | Up to 16 analog/BRI | Up to 32 analog/BRI | Up to 16 analog + 4 BRI |
| Max PRI ports | 0 | 1 | 1 |
| Expansion | Add Astribanks via USB | | Add Comma iTA's via Ethernet |
| Ethernet | 1 x 100Base-T | 1 x 100 Base-T + 1 x 1000 Base-T | 3 x 100Base-T |
| USB | 2 x USB 2.0 | 2 x USB 2.0 | 2 x USB 2.0 |
| Maximum Concurrent Calls | 5 | 40 to 47 (dependent on no. Astribanks) EC tail size = 128 tap | >40 (Independent of no of iTA's) EC tail size = 512 taps |
| Maximum G.729 SIP Calls | 3 | 15 to 19 | 12 to 16 |
| G.729 Conversion Time (per second bi-directional data) | 98 ms | ? | 20 ms |
| FXS Specification | | ? | Silicon Laboratories carrier line card solution: DSP based (programmable) – supports multi-region specifications Long line, high-REN capable Balanced ringing Line testing – G.909 & GR-844 diagnostics IVD friendly SLIC design |



| | Xorcom XR-1000 | Xorcom XR-2000 | Far South Networks Com.X1 |
|-------------------|----------------|----------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| BRI specification | | ? | TBR3 certification (PTP and PTMP) Software selection of: <ul style="list-style-type: none">• TE / NT pin-outs• Activate/de-activate termination |
| Surge protection | | ? | Designed for: Power cross: GR-1089 Intra-building: ITU K.20/21, IEC60950, TIA-968-A Inter-building: Surge compliant with application of external GDT devices |



2.2 Comma GUI Screenshot

The figure below is a representative screenshot of the Comma Web GUI, showing the configuration of telephony ports.

The screenshot displays the 'Far South Networks Comma PBX Manager' interface. The top navigation bar includes 'Start', 'Advanced', 'Monitoring', 'Reports', and 'Review/Apply...'. Below this are tabs for 'Status', 'Setup', 'Hardware', 'Extensions', 'Trunks', 'Outbound', 'Inbound', and 'FlexPath'. The main area is divided into 'Devices' and 'Ports' sections. The 'Devices' section contains a table with columns for Name, Type, Model, MAC Address, IP Address, Auto IP, and Status. It lists three device types: Comma iTA (1 item), Generic Device (1 item), and Managed SIP Phone (2 items). A 'Configure Ports' dialog box is open, showing settings for 'Comma1:a1-5'. The dialog includes fields for Input Gain (0), Output Gain (0), Echo canceller (16ms+NLP), DID number (2001), DID description (zap), a checked 'Detect Caller ID' checkbox, and Hangup detection (500/500 ms). The 'Ports' section on the right shows a tree view of the device configuration, including Comma1, Analog Trunk, Analog Ext, ISDN BRA, and ISDN PRA.

| Name | Type | Model | MAC Address | IP Address | Auto IP | Status |
|-----------------------------------|-------------------|----------|-------------------|--------------|---------|---------|
| Type: Comma iTA (1 Item) | | | | | | |
| Comma1 | Comma iTA | 1P4B4O4S | 00:50:c2:97:91:3b | 192.168.3.10 | false | OK |
| Type: Generic Device (1 Item) | | | | | | |
| Device | Generic Device | | 08:00:27:aa:13:46 | | false | Unknown |
| Type: Managed SIP Phone (2 Items) | | | | | | |
| t22 | Managed SIP Phone | T22P | 00:15:46:00:00:00 | | | |
| t28 | Managed SIP Phone | T28P | 00:15:46:00:00:00 | | | |