

# Sangoma Telephony Card

## A200 2-24 Port Scalable FXO/FXS

**Superior audio quality in a card that is expandable from two to twenty-four ports in a 2U form factor—the Sangoma A200 FXO/FXS card delivers!**

For optimum echo-cancelled voice quality and enhancement choose the A200D Model with Echo Cancellation Hardware. One DSP echo canceller on the A200D Base Card will support Telco-grade hardware echo cancellation on all channels up to the card's maximum configuration in 24 ports with no additional CPU load.

To reach this configuration, simply add additional Remora™ cards to any base card in the A200 Series. A single PCI or PCI Express slot hosts the connection and ensures common synchronous clocking for all channels.

Like all the cards in the award-winning Sangoma AFT Series Product Line, the A200 and Remora™ system's architecture is shared with Sangoma's A101, A102, A104, and A108 cards, ensuring common 3.3 V or 5 V, high performance, universal PCI or PCI Express compatibility, and crash-proof field



*A200 4-Port FXO/FXS, shown with Hardware Echo Canceller, disassembled.*

upgradable firmware to take advantage of enhancements, as soon they become available.

Sangoma cards guarantee error-free faxing and click-free audio on analog-digital links.\*

### Technical Specifications

- From 2 to 24 ports supported, mixing FXO and FXS interfaces, as required
- Support for Asterisk®, FreeSwitch™, and Yate as well as other Open Source and proprietary PBX, Switch, IVR, and VoIP gateway applications
- Single synchronous PCI interface for all 24 FXO/FXS ports
- Four RJ11 connections per Remora™ card
- Dimensions: 2U Form factor: 120 mm x 55 mm for use in restricted chassis
- Includes both standard and short 2U compatible mounting clips for installation in 2U rack-mount servers
- 32 bit bus master DMA data exchanges across PCI interface at 132Mbytes/sec for minimum host processor intervention
- Autosense compatibility with 5 V and 3.3 V PCI busses
- Fully PCI 2.2 compliant, compatible with all commercially available motherboards, and proper sharing of PCI interrupts
- Intelligent hardware: Downloadable Field Programmable Gate Array programming with multiple operating modes. Field upgradable so that new features can be added when they become available
- Maximum operational power for PCI: 3.75 W (0.75 A @ 5 V) + 4.2 W (0.35 A @ 12 V) per FXS module  
For PCI Express: 2.64 W (0.8 A @ 3.3 V) + 4.2 W (0.35 A @ 12 V) per FXS module
- Temperature range: 0 – 50 °C
- Shipped with standard RJ11-terminated cables

### Get the Fax on Sangoma Hardware

- With Sangoma, there is no need for a separate analog line to run your fax machine
- Using T1/E1 passthrough with Sangoma analog cards, there are no clock slips, buffer overruns, or transmit underruns that cause missed lines, blank sheets, and missed pages when faxing

\*Hardware echo cancellation option required.

- Sangoma A200 and A400 cards synchronize perfectly with digital T1/E1 cards and the PSTN atomic clock for error-free fax and modem passthrough and superior voice quality over T1 and E1 lines\*

### Optional: DSP Echo Canceller Daughterboard on the A200D

- G.168-2002 echo cancellation in the hardware
- 1024 taps/128 ms tail per channel on all channel densities
- DTMF decoding and tone recognition
- Voice quality enhancement: music protection, acoustic echo control and adaptive noise reduction
- No CPU load as a result of echo cancellation
- Does not increase the physical size of the card, and no additional slot is required

### Wiring Connections

The A200 and Remora™ cards incorporate 4-pin RJ11/4 narrow jacks, such as those used in telephone handsets.

Each Sangoma A200 Card is shipped with four 2 m cables terminating in a narrow RJ11/4 plug at one end and a telephone-standard RJ11/6 plug at the other.

To hardwire the A200 system, you can purchase a kit of 12 RJ11/4 plugs and a crimping tool, sold separately.

### Operating Systems

- Windows® 2003, Windows® XP, Windows® Server 2008, Windows® Vista
- Linux (all versions, releases and distributions from 1.0 up)

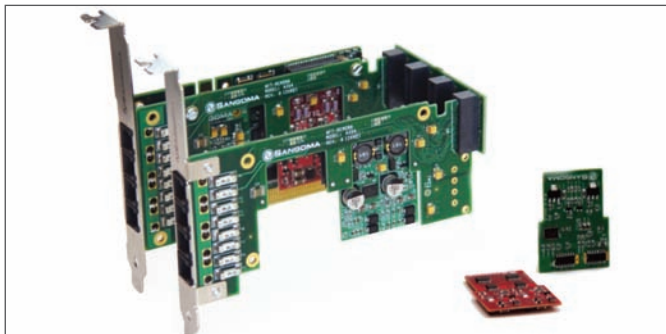
### Diagnostic Tools

WANPIPEMON, SNMP, System logs

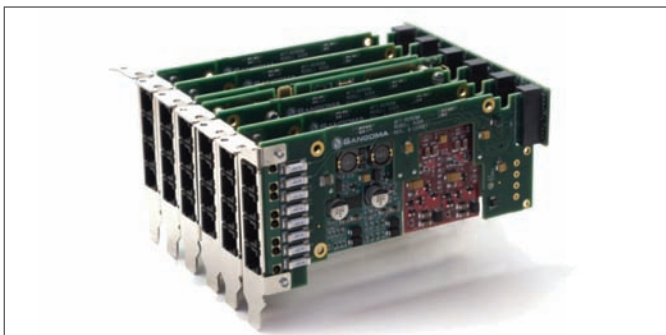
### Certification

FCC Part 15 Class A, FCC Part 68, and EN 55022 Class A. Technical certifications in Russia and Malaysia.

### Architecture



The A200 consists of a Remora™ daughterboard mounted on the AFT PCI card. The Remora card has two sockets each of which can accept a FXO-2 or FXS-2 module. Each FXO-2 or FXS-2 module supports two FXO or FXS lines, respectively.



Up to five additional Remora™ daughterboards can be mounted in empty slot positions beside the A200 assembly, connected to the A200 by a backplane bus connector.

### Warranty

Lifetime warranty on parts and labour. Plus a 30-day-no-questions-asked return policy.

### Production Quality

ISO 9002

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