# 832060 Analog Bridging Card
IMACS - Integrated Multiple Access Communications Server

✓ **Ideal for SCADA, Remote Monitoring, Order Wire, Data Loggers and Controllers**

✓ **Bridges up to 62 DS0s per Shelf**

✓ **Complete Remote Management**

✓ **Part of the IMACS Product Line of Channel Banks**
   - *Over 50 Plug-In Solutions for Voice, Data and IP*
   - *Integrated Processing Features*
       - *Digital cross-connect*
       - *T1/E1 conversion*
       - *Voice compression*

✓ **Proven. Approved. Deployed.**
   - *Over 80,000 systems worldwide*

Seamlessly Bridge up to 62 DSO Circuits

The Analog Bridging feature allows the analog voice band signals from several voice circuits to be combined (bridged). In the case of the IMACS application, each analog circuit is a DS0 channel carrying analog traffic from an access card port such as an FXS, FX0, 4 W E&M, or 2 W E&M. So, although the traffic originates as an analog signal, it is bridged digitally, after it has been digitized into a DS0. The bridge is set up via the provisioning interface on the IMACS maintenance terminal. Once the bridge is set up, the circuits remain bridged until the provisioning is changed. There is no supervision (off hook/on hook) or signaling (dialing) involved. End-users cannot dynamically add or drop themselves from the bridge. In summary, it is like a permanent telephone conference without the dynamic user control.
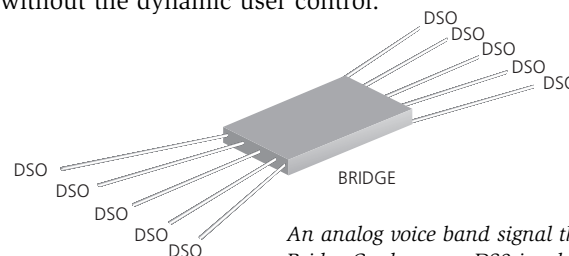
An analog voice band signal that enters the Analog Bridge Card on any DS0 is added to the incoming voice band signals from any other DS0 and broadcast to all DS0s connected to the bridge.

Supervisory Control and Data Acquisition

SCADA (supervisory control and data acquisition) systems generally cover large geographic areas, and rely on communications systems, like IMACS, to transport data between multiple remote terminal units (RTUs) and central master terminal units (MTUs).

The analog bridging feature allows the data from several RTUs to share a single DS0 in the WAN and use a single port on the MTU. Without the analog bridging feature, each RTU to MTU connection requires a separate circuit, typically a 4 Wire, Transmission Only (4W TO) circuit. If redundant MTUs are required, Analog Bridging can be used to send the same data to both MTUs. Also, either MTU can broadcast to all RTUs.
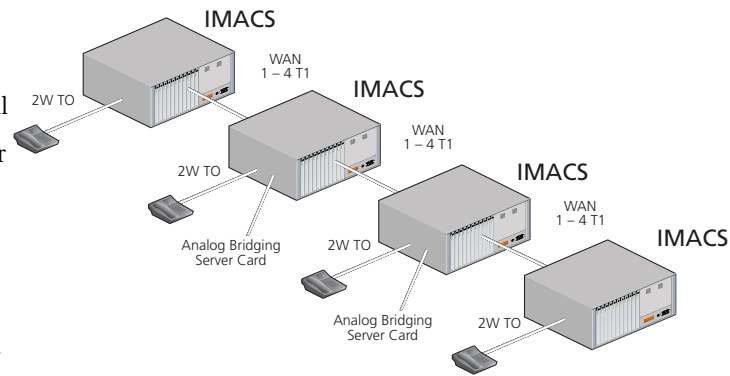
Analog Bridging Used in an SCADA Application Redundant MTU
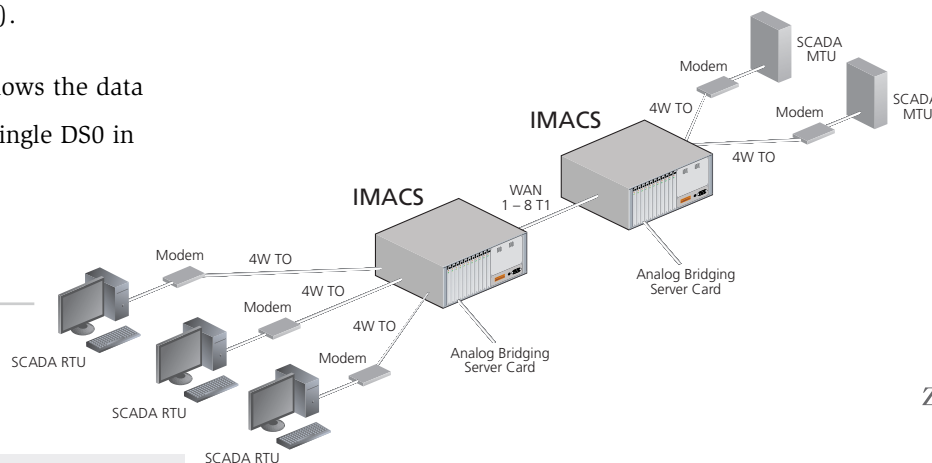
Order Wire

It is often desirable to have a voice communications circuit between systems in a network for maintenance people to use to communicate during maintenance and trouble shooting activities that involve several nodes of the network. Such a circuit has historically been called an "order wire". An order wire is essentially a big party line that is always active. There is no supervision (off hook/on hook) or signaling (dialing). You can talk on any port of the order wire, and all other ports hear it. You can listen, and hear everyone else who is talking on all the other ports.

The analog bridging feature will allow several 2 wire voice circuits (from FXS or 2W E&M card ports) to be bridged together to form an order wire.

Analog Bridging Used in an Order Wire Application

Technical Specifications

Card

Input Voice Channels
- Can originate from any 2-wire or 4-wire voice card or from a DS0 on a WAN (El/T1) interface
- Mu-law & A-law 64Kbps PCM compatible on a per channel basis

Maximum Card Count
- 2 per system

Bridges
- Maximum of 8 bridges per card

DS0s per bridge
- Maximum of 30 DS0 per bridge

Bridged DS0 per shelf
- A maximum of 62 DS0s can be bridged in a shelf. – see note 1

Physical Specification

Card Height
- 8 inches (20 cm)

Card Width
- 15/18 inches (2.35 cm)

Card Depth
- 71/2 inches (18.75 cm)

Power Consumption
- 8.8 Watts

BTU/hr
- 30

Operating Temp
- 0 to 50 C, 32 to 122 F

Storage Temp
- -20 to 80 C, -4 to 176 F

Humidity
- 0 to 95% Humidity, Non-Condensing

IMACS Platform

Chassis
- 891630 IMACS 600, 891830 MACS 800, or 891930 IMACS 900

Control CPU Card
- 880360 or 880361 Cross Connect CPU

System Host Code
- 5.4.6 or later

Interface Card
- 892260, 892360 & 892460

Power Supply Options
- All AC/DC power supplies supported

Note 1 – Although the card will support 8 bridges of 30 DS0 each, the card occupies a user slot; this leaves a maximum of 7 user slots for voice cards. Therefore the maximum number of voice DS0s that can originate on the shelf is 56 (7 X 8). Additional DS0s from the WAN ports can occupy the bridge. However, the shelf bus structure limits the shelf to 62 voice DS0s for any application, including bridging.

IMACS Ordering Information

Model No.	Description
832060	DSP Server Card
68200	Analog Bridging Firmware
60546	CPU Firmware Host Version 5.4.6

ZTI-IMACS-ABC-DS-0206