Sidebar Features

- **PBX and Central Office Simulator**
- **Switch, Gateway, Transmission Testing**
- **Digital Switching with Protocol Conversion**
- **Digital T1/E1 Interfaces (s/w selectable)**
- **R1, MFC-R2, PRI-ISDN, SS7 Signaling Protocols (includes user-defined CAS State Machine)**
- **Bulk Call Generation with Scripting Capability**
- **Load Testing with Real Time Fax Calls, Modem Traffic, Voice Files**
- **Call Quality Assessment using PAMS, PSQM, PESQ**
- **Remote Access Capability**
- **Generate Call Records**

Digital Central Office Switch Simulator (DCOSS)

Overview

The Digital Central Office Switch Simulator (DCOSS) converts a PC (portable, tower, rack-mount) into a digital central office switch simulator, PBX and switch, complete with T1, E1, POTS, and VoIP Interfaces. A user-friendly graphical interface (GUI), through which complex switching, signaling, and

Digital transmission functions are easily controlled, provides the ease of operation as well as the flexibility required from telephony test equipment. In addition, the DCOSS provides a user-friendly GUI, remote client access (GUI, CLI, SDK), and scripting with which users can capture the performance of networks in a wide variety of scenarios.

DCOSS is ideal for simulating & testing advanced telecom networks and products, including switches, gateways, and transmission systems. The DCOSS can also be used for verifying T1/E1 signaling protocols. These protocols include a variety of T1/E1 CAS, PRI ISDN, SS7, No Call Control, Fax over T1/E1 (V.29, V.27, V.33, and V.17), Modem over T1/E1 (V.21, V.23, V.34, V.90, and V.92), and VoIP protocols (SIP, H.323, MEGACO, MGCP, Fax over IP – T.38).

Main Features

- Portable system with digital T1/E1 trunks, SS7, PRI ISDN, POTS & VoIP Interfaces.
- Variety of Signaling Protocols including R1 (robbed-bit), MFC-R2, PRI ISDN (includes NFAS), SS7, VoIP Protocols (when connected to GL Gateway), and others.
- Support for up to 16 T1's and/or E1's in single DCOSS system.
- Software selectable T1 or E1 (requires optional hardware).
- Generates & Receives Manual Calls / Automatic Bulk Calls Simultaneously on any/all timeslots
- Record and Playback of PCM Voice Files simultaneously over all timeslots.
- Supports Voice Quality Testing PESQ (ITU-T P.862.1/2).
- Real-Time FAX Call Generation/Reception (V.29, V.27, V.17, V.33) simultaneously over all timeslots. Includes Fax Quality Assessment.
- Send/Receive Modem Traffic (V.21, V.23, V.34, V.90, V.92) simultaneously over all timeslots. Includes Modem Quality Assessment.
- Transmit and Detect DTMF/MF digits/Single or Dual-Frequency Tones simultaneously over all timeslots.
- Switches Calls among Timeslots/Trunks with Protocol Conversion capability.
- Remote Access Capability (Client/Server) using GUI or Command Prompt. API to develop user-defined client.
- Real-time System Statistics with Hourly Information as well as Real-time Status.
- Multiple 2-Wire (RJ11) Standard Telephone Interfaces (FXS).
- VoIP Protocols and Fax Simulation when combined with GL Gateway.
- Manual or Automatic ANI (Caller ID) Generation.
- Bulk Call Scripting with simple point-and-click script setup. Allows for conditional commands as well as script looping

DCOSS Functions

Traffic Generation / Reception

DCOSS provides the solution required for testing switches, gateways, and networks using a variety of signaling protocols. As depicted below, DCOSS can simulate both ends (or one end) of a complex switching network with a variety of traffic generators (both internal and external). DCOSS can also be controlled remotely using the optional Client/Server application. The Remote Capability allows full control of many DCOSS's from a single client as well as many clients accessing a single DCOSS.

Switching Solutions

Using the DCOSS graphical interface, complex switching solutions can easily be configured while providing total voice/data throughput. As depicted below, protocol conversion is accomplished during call switching.

Traffic Quality Assessment

During bulk calling and manual calling, DCOSS has the ability to analyze the generated traffic over the digital T1/E1 interfaces. As a result, DCOSS provides a quality assessment of the traffic.

Bulk Call Scripting

Simulating traffic and analyzing traffic are integral parts of a central office simulator test tool. DCOSS provides the functionality of bulk calling and utilizes a user-friendly GUI for configuring simplistic as well as complex scenarios on a per-timeslot basis. When more complex configurations are desired, including conditional statements and Do Loops, DCOSS provides Bulk Call Scripting, which utilizes a point-and-click interface for creating and editing bulk call scripts.

DCOSS Configuration

GL Communications custom configures your DCOSS system to satisfy all your requirements including multi-E1, multi-T1, E1/T1 combinations, and Digital/Analog combinations. The following are the available cards for your custom configured DCOSS system.

- Dual T1/ E1 (software selectable)
- Quad T1/E1 (software selectable)
- Individual, multiple, or full FAX support per DCOSS system
- 96 Port Modem
- Two-wire (RJ-11) analog interface (station-connect) for up to 64 handsets with user defined telephone numbers
- Up to two SS7 Signaling boards, with dual T1/E1 interfaces and support for either 4 or 16 signaling links.
- User interface for all necessary system parameters. All system parameter configurations may be saved to the DCOSS database for quick and easy retrieval.

Other Configuration

DCOSS APS System

The DCOSS APS (Analog Phone Simulator) converts a GL DCOSS into an analog phone simulator that simulates a bank of up to 384 analog telephones.

The DCOSS connects to the APSCB24/48 via a T1 (up to two T1's per APSCB24/48). Each of the analog ports (up to 48 per APSCB24/48, maximum of 384 ports per DCOSS system) serves as an independent analog telephone, which can be individually configured and activated for various telephony tasks.

DCOSS MG System

The DCOSS MG (Media Gateway) system supports dual redundant Ethernet trunks for traffic and signaling testing of VoIP and IP networks. The DCOSS / MG combination provides user friendly bulk call generation and reception for various voiceband traffic types including voice, fax, and modem. It can be connected to any IP Phone, softphone, VoIP PBX, or VoIP Network / Cloud.
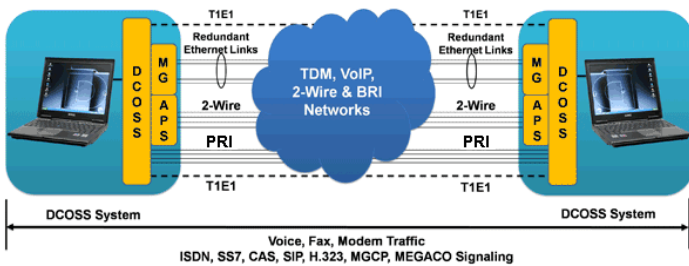
DCOSS T3 Solution

A fully loaded T3 system can be configured using four DCOSS systems, supplying all 56 DS1's, and two T3 Mux's. The entire T3 solution is housed in a single 19" rack and utilizes a single keyboard, mouse and monitor to control all four DCOSS units through a PC switching arrangement.
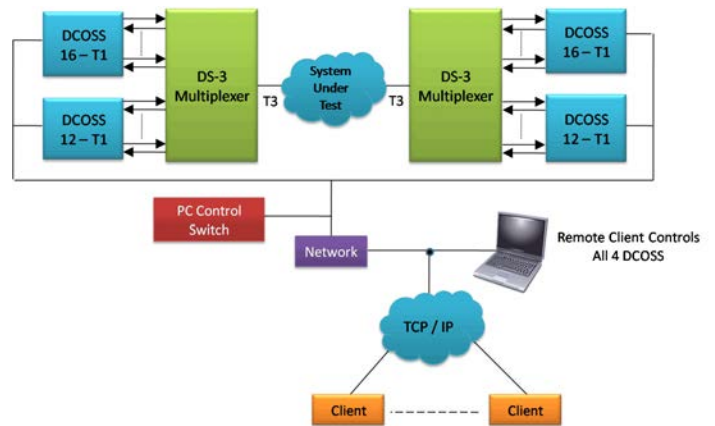
Available Protocols

- CAS T1/E1
  - R1 (WINK)
  - T1 Loopstart
  - T1 Ground Start
  - T1 Feature Group D
  - T1 Immediate Start
  - E1 MFC-R2
  - Certified Countries Available: Argentina, Bahrain, Bolivia, Brazil, Chile, China, Columbia, Czech Republic, Honduras, Indonesia, Korea, Malaysia, Mexico, Panama, Philippines, Singapore, Thailand, and CCITT
  - E1 Digital European CAS (Italy, Netherlands, Sweden)
  - E1 Digital E&M (Brazil and Indonesia)
  - E1 International Wink Start
  - User-Configurable State Machine
- SS7 Signaling - MTP 1-3, ISUP, TUP, TCAP/SCCP, and SCP
- PRI ISDN (Europe, USA, Asia)
- Fax & Modem over T1E1
- Fax & Modem over VoIP – T.38
- VoIP- SIP, MEGACO, MGCP
- SS5
- No Call Control

Europe	France Telecom VN6 (ETSI) EuroISDN (Available countries: Austria, Denmark, Finland, Greece, Iceland, Ireland, Italy, Liechtenstein, Luxembourg, Netherlands, Norway, Portugal, and Spain) Belgium, China, Great Britain, Sweden, Germany, Singapore, European QSIG
USA	(includes ISDN-NFAS) Northern Telecom DMS 100 AT & T 5ESS10 AT&T 4ESS US National ISDN2 (BellCore) USA QSIG
Asia	Australian Telecom 1 Hong Kong Telephone Nippon Telegraph Telephone Korean Telecom

Buyer's Guide

DR001 - DCOSS Software (R1 Protocol Included)

DT002/4 - Dual/Quad T1 Card

DR005 - PRI ISDN

DR007 - Digital E&M + European Digital CAS (Italy)

DR010 - T1 CAS Protocol

DR042 - Signaling System 7 (4 MTP Links) w ISUP, Dual T1/E1 Interface

DR052 - Signaling System 7 (16 MTP Links) w ISUP, Dual T1/E1 Interface

DOR001 - Remote Access (Client/Server)

DO010 - Optional Scripted Control for Bulk Call Generate/ Receive

APSCB-24 - 24-Port Analog Phone Simulator (APS)

APSCB-48 - 48-Port Analog Phone Simulator (APS)

APSCB24i - 24-Port Analog Phone Simulator for International P/S

APSCB48i - 48-Port Analog Phone Simulator for International P/S

VQT035 – FXO RJ11 Hardware Tap and Audio Capture Software

FXT001/FXT002 - GL Insight – Single Fax Analysis - TDM / IP

MDT001/MDT002 - GL Insight – Single Modem Analysis - TDM / IP