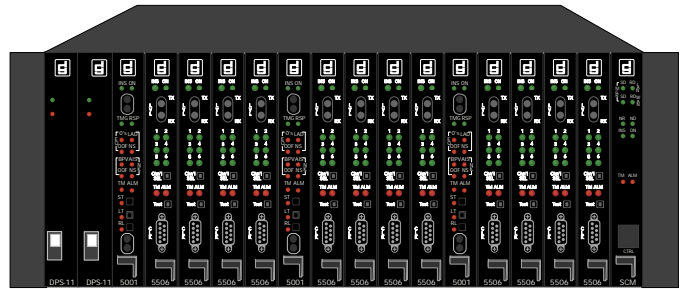# Application Brief

SS7 Signal Transfer Point (STP) Network Access
SpectraComm 5506 OCU-DP and SpectraComm 5516 DS0-DP

Highlights:

- NEBS Level III Compliant
- High Density Intra-office OCU-DP (SC 5506)
- High Density DS0-DP with DS0A Signalling (SC 5516)
- Low Power — Less than 5 watts per card
- SC 5516 compatible with Tekelec Eagle switch and controller utilizing DS0-A interfaces
- Meets Required Footprint for CO Collocation
- Centralized or Distributed Network Management via GDC TEAM® and HP OpenView

Overview

Over the years, wireless and wire-line Service Providers have sought a more efficient, highly reliable solution to provision SS7 signal transport. Initially, carriers deployed a channel bank to split the incoming T1 link into DS0s for the signaling channels. Today's Service Providers require a more scalable transport method with higher densities, network management and security features. This is especially true for rapidly expanding cellular networks. In the case of collocation, space is at a premium and both cost-effectiveness and scalability take on new dimension.

Answering The Call For Innovation
Start with a NEBS-Compliant Intelligent Platform

GDC has long been a leader in the design of NEBS-compliant products. A requirement for Central Office equipment located in North American Public Network centers, NEBS is a universal measure of network product excellence for carriers.

GDC's NEBS Level III compliant SpectraComm 5000 Integrated Access System answers the call for innovation. GDC's SpectraComm high density shelves offer universal rackmounting for up to 16 network access support products. SpectraComm provides a new dimension of flexibility and control, made possible by its bus-oriented backplane that transforms the basic rackmount shelf into an intelligent platform with integral network management capabilities.

Channel grooming by means of the SpectraComm 5001 (SC5001) LTU (Line Terminating Unit) permits the use of high capacity T1 for the consolidation of circuits.

Each SC5001 incorporates a powerful intelligent CSU (channel service unit), supporting D4 and ESF framing as well as AMI and B8ZS line coding. The SC5001 LTU provides flexible, network managed access to T1 and fractional T1 services. Each LTU supports a single T1 line for network interconnection.

Today's power conscious service providers will appreciate the low power consumption — less than five watts per card.
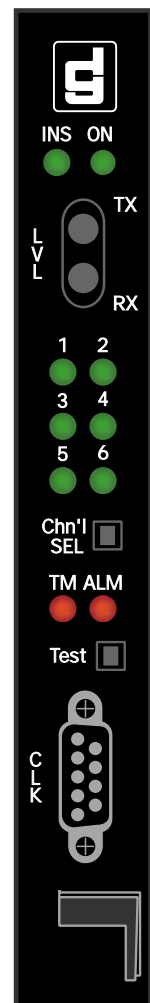
Add Flexibility

GDC delivers the flexibility service providers require to maximize T1 usage. GDC's high density SC 5506 (OCU-DP) and SC 5516 (DS0-DP), as well as the SC 5520 (V.35) units for single channel applications, can be deployed on the same T1 circuit via the SC 5001 LTU, reducing costly circuit charges.

GDC's Solution

Both the SC 5506 and the SC 5516 High Density cards answer the call for innovation. They were designed with today's scalability and density requirements in mind and with the flexibility required by Service Provider craft personnel.

- The SC 5506 and the SC 5516 each support 6 data ports: 4 cards accommodate 24 DS0s or a full T1

- Front panel LED status indicators allow confirmation of local configuration and status

- Front panel monitor, test jacks and rate clocks are provided for use with test equipment

General DataComm

- Front panel non-interfering channel selection allows the user to scroll between channels with test jack in place, without service interruption on intermediate channels

- Support for 56K rates where legacy D4 channel banks exist

- Support for 64K rates where clear channel T1 is utilized

- Mix 56 and 64K rates on the same card

- Low power — less than 5 watts per card

Scaled To Fit Your Needs

In applications where density is a requirement and space is at a premium, a single SpectraComm 5000 with fully redundant power typically supports three T1 circuits, twelve SC5506 or SC5516 cards, and transports 72 DS0 ports in seven inches of space (4RUs).
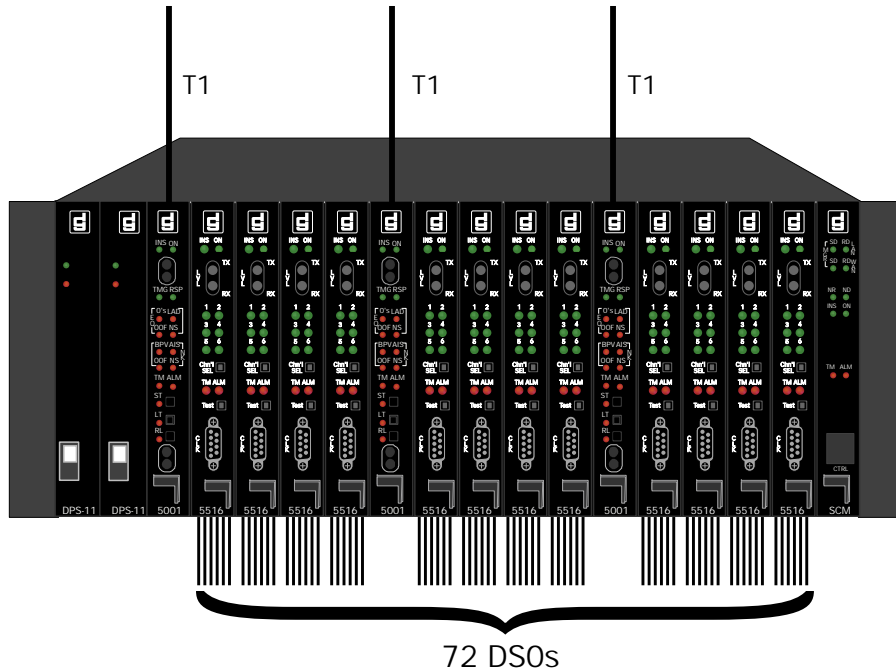
For larger node requirements, the SpectraComm 5000 can be configured to accommodate as many as 27 T1s and 648 DS0s in 73.5" or 42 rack units. It grows as you grow.

Network Management Options

GDC's SC 5506 and SC 5516 are supported by centralized SNMP-based network management via the GDC SCM and TEAM® applications, which run under HP OpenView.

Again, the network management capabilities were designed with Service Provider craft personnel in mind and allow:

- Simplified Configuration

- Continuous on-board diagnostics, channel status and alarm reporting

- Remote control/over-ride of local test features for use when troubleshooting in conjunction with local craft personnel

- Control and selection of alarm severity thresholds (major/minor)

- Allows downloads of firmware upgrades

- Supports two versions of code onboard as a backup

- Auto configures replacement SC 5506 and SC5516 cards based on most recent configuration

72 DS0s

Support for as many as 72 DS0 ports per shelf

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