SpectraCOMMONALITY
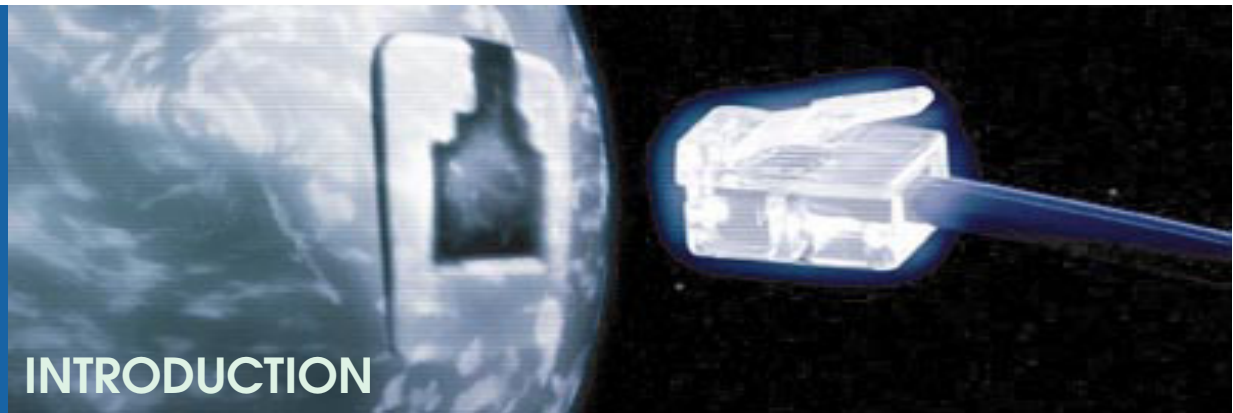
INTRODUCTION

SpectraComm has the Best Connections in the Business

The SpectraComm LAN/WAN technologies result from more than 30 years of engineering method and innovation at General DataComm. From IP to T3 to T1-E1 to xDSL, SpectraComm solutions support a wide range of applications in a common plug-in blade form factor.

This "SpectraCommonality" offers Telcos, Integrators, and Enterprises the unparalleled "in demand" services access and transport needed in today's critical networks through cost-effective rack-and-stack deployment, backed by proven General DataComm reliability.

Blade & Packaging Solutions

- IP routing with RIP & OSPF support
- Transparent Ethernet modem functionality
- Ethernet switching
- Synchronous/Asynchronous over IP data transport
- T3 broadband services
- T1/FT1 (Fractional T1) wideband services
- Built-in and optional SteadFast Security solutions
- DDS/GDS (Digital/Generic Data Service) narrowband services
- SS7 signal transport
- Symmetric DSL services
- CPE provisioning
- Up to 33.6 kbps SN or PL analog services
- Secure, remote network management
- NEBS-compliant shelves/enclosures for low or high density applications
- NEBS-compliant blade adapter for legacy DataComm shelves

NEBS Level III

A requirement for Central Office equipment located in North American Public Switched Network centers, the rigorous Telcordia NEBS requirements are a universal measure of network product excellence for carriers. Telcordia groups NEBS criteria into three levels, with Level III being the most stringent. Anything less than Level III compliance can restrict deployment in certain carrier environment applications. By meeting the most stringent requirements, GDC's NEBS Level III class of SpectraComm blades can be deployed in all interior carrier environments.

NEBS III compliance is a mission-critial requirement for GDC's carrier and service provider customers who use SpectraComm LAN and WAN devices in their internal network infrastructures and central office applications.

NEBS includes criteria for operational continuity, protection of property, and personnel safety. NEBS is the major test of quality and safety required for any organization supplying or purchasing network equipment for public network high density applications. SpectraComm blades designed to the NEBS criteria are compliance tested by a nationally approved independent laboratory to ensure the stringent requirements for NEBS Level III certification.

Certified NEBS Compliant

- **ENSURES** equipment compatibility with telephone industry's standards

- **SIMPLIFIES** equipment planning and installation

- **GUARDS** against service outages

- **PREVENTS** interference to close proximity telecommunications equipment

- **MINIMIZES** the risk of fires

- **EXTENDS** equipment operation under stressful environmental conditions

- **PROTECTS** personnel from injury

CERTIFIED TELCO-TOUGH

SpectraComm Packaging

The modular design of SpectraComm blades, shelves, and enclosures allows network managers to efficiently grow their networks to accommodate future demands for services and throughput. From the single-slot enclosure to the "Telco-tough" 16-slot high density shelf systems, SpectraComm blades front-load effortless into any any single slot throughout the Central Office, CEV or hut. This unified and scalable design simplifies network inventories and sparing, streamlines network topology, and maximizing network facilities. SpectraComm blades are hot-swappable, allowing service or hardware upgrades without interrupting system operation and without powering down the SpectraComm shelf or enclosure.

Rack & Stack Compliant

SpectraComm shelves (SC5000 and SC2000) both meet EIA-310E specifications for front- or center-of-gravity rackmount installation in 19" or 23" inch racks and cabinets. An optional bracket kit installs the shelves in 26" racks or cabinets. The SC2000 is also designed for wall-mounting using existing hardware. SpectraComm standalone enclosures (RA 1000, SC1002 and SC1012) are designed for desktop deployment and can be placed on perforated trays in open racks and cabinets.

DataComm Shelf
DS-1, DS-5 or DS-6 Models
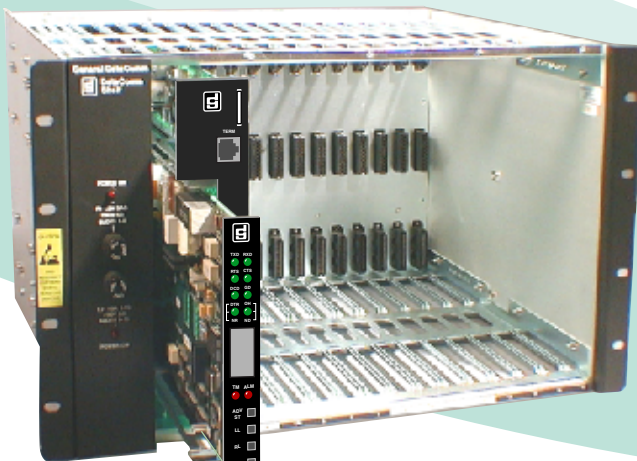
Blade Adapter

Hot Swappable Product Card

SpectraCommonality for Legacy Infrastructures

Networks that employ legacy DataComm shelves can migrate to SpectraComm products with GDC's Blade Adapter. All single-width SpectraComm blades will front-load into most DataComm shelf systems, using existing DataComm cabling or SpectraComm cabling strategies. The Blade Adapter lets network managers fill their remaining DataComm slot inventories with SpectraComm innovation.

Added Advantages

Carrier-class SpectraComm shelves and enclosures also support GDC's Universal Access System blades, which offer a full range of line-by-line xDSL applications. For more information about the UAS family of products, consult your GDC representitive.

INNOVATIVE COST-EFFECTIVE

SpectraComm 5000
High Density Shelf

GDC's line of SpectraComm 5000 shelves are the high density rackmount solution for service provider and enterprise environments, deploying up to 16 SpectraComm blades in each 4RU (7-inches high) NEBS and EMI compliant shelf.
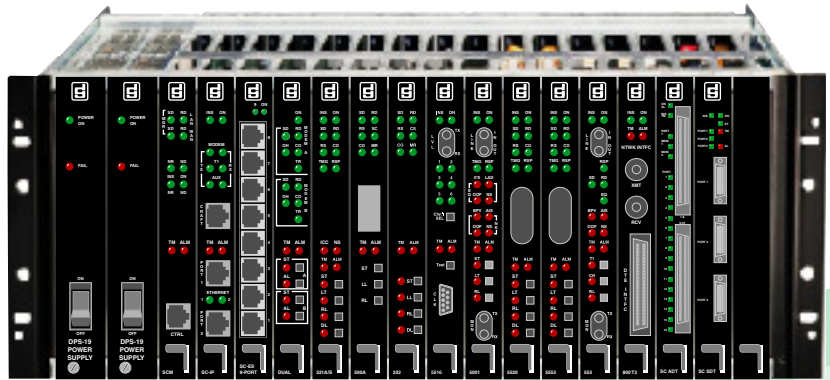
Blades plug into network interface, DTE and management bus connectors at the shelf backplane to support DSX-1, V.35, EIA-530, V.24, EIA/TIA-232, BNC, and HSSI interfaces for a total connectivity solution with integral network management built in. This SpectraCommonality ensures that service interfaces, transmission product types and speeds, and business equipment connections meet your networking requirements.

SC5000 shelves are AC- or DC-powered using one or two dedicated slots for the plug-in power supplies. One supply supports a fully populated shelf of up to 16 blades. For critical, "always on" applications, a second supply provides load sharing power redundancy.

SpectraComm 2000
Low Density Shelf

The SpectraComm 2000 is a low-density rackmount shelf intended for the central office, remote office, CEV, Hut, or cell sites that require a hardened, NEBS-compliant housing. Up to two single-width SpectraComm plug-in blades can be front-loaded in the SC2000 shelf, with integrated TIA/EIA-232F, V.35, or EIA-530 interfaces, network line, and craft connectivity provided for each capable device.

Independent dual power supplies take advantage of power sources available at cellular base station controllers, cellular base station transmission systems, and the central or remote office. An external AC "all range" power supply is also available. During normal operation, the dual power supplies perform load sharing and provide power redundancy. Each power supply can be replaced without service interruption or powering down the shelf.

202 *to* DDS *to* T1 *to* T3 *to* DSL *to* M1:3

SpectraComm Standalone Enclosures

The SpectraComm standalone enclosures (RA 1000, SC1002 and SC1012) are intended for deploying single SpectraComm blades in non-NEBS applications. The compact enclosures are typically used at remote customer premises that require management from master devices, in-band SNMP management, or TEAM management from a central site. Either enclosure can accept any single-width plug-in SpectraComm blade through the front panel slot without the use of tools and without powering down the enclosure.

The rear connector panel provides three 8-pin modular jacks (two line interface ports and one craft port) and one DB25F (DTE) connector. These integrated TIA/EIA-232F, V.35, or EIA-530 interfaces are used as needed by the installed SpectraComm blade.

Enclosure Power Provisioning
The RA 1000 enclosure is AC-powered; the SC1002 and SC 1012 enclosures are DC-powered. All standalone enclosures feature low profile, compact sheet metal packaging that ensures low emissions.

Management
SpectraComm standatone enclosures provide local test and configuration connectivity via a rear panel craft port for those SpectraComm blades that support a front or rear panel craft interface. Local test and configuration connectivity is also provided via a rear panel craft port for those SpectraComm blades that support a front or rear panel craft interface.

SpectraComm standalone enclosures are currently intended for non-NEBS environments.
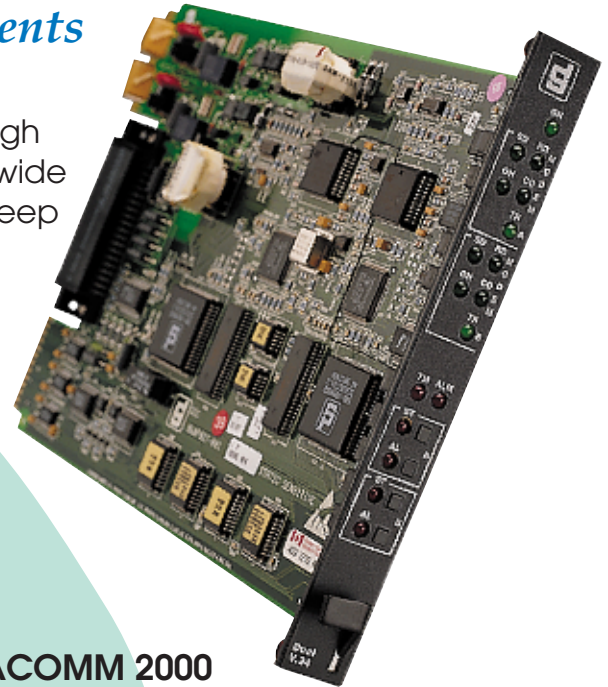
RELIABLE SCALABLE SECURE

SpectraComm PACKAGING

One Blade - Many Environments

DATACOMM DS-1, DS-5, DS-6
with SpectraComm Blade Adapter

7.0" high
0.81" wide
9.5" deep

SPECTRACOMM 2000
120/240 VAC,
+24/-48/-60 VDC,
Redundant or Non-redundant Power

SPECTRACOMM ENCLOSURES
(Non-redundant Power)

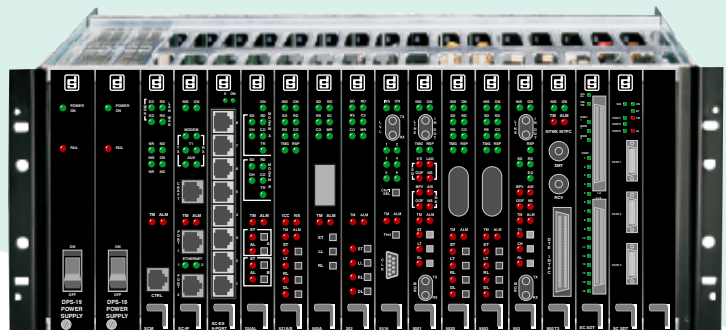Model: RA 1000
100 to 240 VAC auto-range

Model: SC 1002
+24/-48 VDC

Model: SC 1012
+10/+18 VDC

SPECTRACOMM 5000
90 to 129 VAC auto-range
176 to 264 VAC auto-range
-42/-70 VDC,
Redundant or Non-redundant Power

POWERED FOR YOUR NEEDS

SpectraComm BLADES

From IP to T3 to T1/FT1 to legacy analog communication to M1:3 and xDSL, GDC SpectraComm blades offer an integrated, managed solution for today's critical networks.

SPECTRACOMM IP ROUTERS, SWITCHES, TRANSPORTS

SC IP MR1 Router *(T1 dynamic router with RIP and OSPF support; 2 10/100 Ethernet)*
SC IP T1 Router *(T1 LAN extension; 2 10/100 Ethernet, 8-port RS232/contact sense)*
SC IP E1 Router *(E1 LAN extension; 2 10/100 Ethernet, 8-port RS232/contact sense)*
SC IP DSL.bis Router *(G.s LAN extension; 2 10/100 Ethernet, 8-port RS232/contact sense)*
SC Ethernet 9-Port Switch *(9-port 10/100 Ethernet switch)*
SC Ethernet 18-Port Switch *(18-port 10/100 Ethernet switch)*
SC SDT *(3-port synchronous data transfer device)*
SC ADT-8/-16 *(8-port or 16-port asynchronous data transfer devices)*
SC ADT 32 *(32-port asynchronous data transfer device)*

SPECTRACOMM MODEMS

SC 202 Modem *(Line-by-Line 202 compatible modem)*
SC V.F28.8/33.6 Modem *(Line-by-Line V.34 modem)*
SC V.34 4-Port Modem *(Line-by-Line V.34 modem with 4-port DTE interface)*
SC V.34 Dual Modem *(Line-by-Line dual V.34 modem)*
SC V.34 DBU Modem *(Line-by-Line dial backup for DDS circuits)*

SPECTRACOMM CSUs & DSUs

SC 500A T1 DSU *(Line-by-Line all-rate clear channel data service unit)*
SC 521A/S DDS DSU *(Line-by-Line all-rate DDS data service unit; accepts sealing current)*
SC 553 T1 DSU *(Line-by-Line T1/FT1 data service unit w/optional cascade port)*
SC 800 T3 DSU *(Clear channel/subrate data service unit to T3 service)*

SPECTRACOMM LTUS & COMPANION DEVICES

SC 5001 T1 LTU *(T1/FT1 line termination)*
SC 5002 E1 LTU *(E1/FE1 line termination)*
SC 5034 DSE *(DSE and dual channel fax/modem)*
SC 5520 DDS DSU *(DDS CSU/DSU data set emulation)*
SC 5553 T1 DSE *(T1/FT1 CSU/DSU data set emulation)*
SC 5506 OCU Dataport *(6-port intra-office office chanel dataport)*
SC 5516 DS0 Dataport *(6-port digital signal zero dataport)*

SPECTRACOMM MULTIPLEXERS

SC M13 Multiplexer *(High density multiplexer for up to 28 DSX-1 signals)*
SC SRM-6 Multiplexer *(Subrate 6-channel multiplexer)*
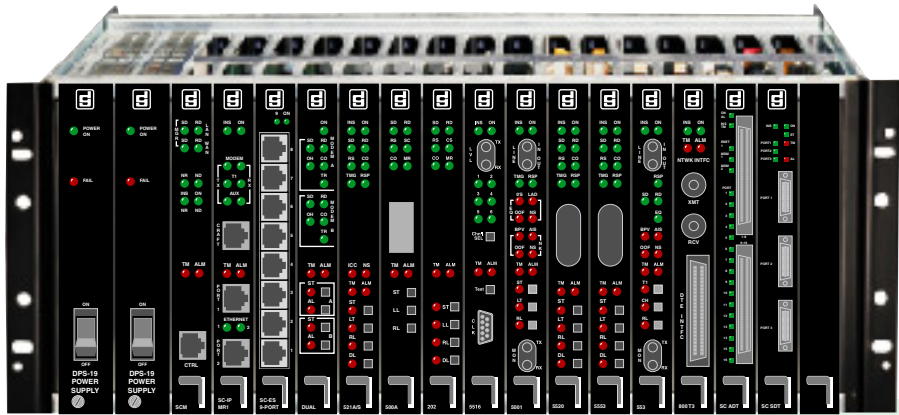
SPECTRACOMM MANAGEMENT

SC Manager Card *(Shelf manager and SNMP proxy agent)*
SC Alarm Card *(Shelf power alarm indication)*

INTEGRATED AND MANAGED

SpectraComm HIGH DENSITY

Best Connections

SpectraComm 16-slot shelf holds single-width and multi-width blades in any combination. Modular or massterm (50-pin amp) SC/UAS backplanes provide the DTE and line interfaces.

Examples of Maximum Application Density

16 Bell 202 Private Line Networks
(via SC 202 modems)

32 Private or Switched Network Lines
(via V.34 dual modems)

16 Private or Switched Network Lines
(via V.34 modems)

16 T1 Circuits
(via 16 SC 521A/S DSUs)

4 T1 or E1 groomed circuits
(via 4 SC 5001 LTUs and 12 DSEs)

4 E1 groomed circuits
(via 4 SC 5002 LTUs and 12 DSEs)

15 FT1 circuits
(via 15 SC 553 DSUs)

15 T3 circuits
(via 15 SC 800T3 DSUs)

112 DSX-1 circuits
(via 4 SC M13 multiplexers)

72 DS0 dataports
(via 12 SC 5516 DS0-DPs)

72 OCU dataports
(via 12 SC 5506 OCU-DPs)

16 SCIP Routers
(via 16 SCIPs in router mode, or 16 SC MR1s)

16 SCIP Transparent Ethernet Modems
(Extended LANs via 16 SCIPs in LAN-X mode)

144 10/100 Ethernet ports
(via 8 SCES 16-port Ethernet switches)

256 Async data transfer or termserve ports
(via 8 SC-ADT 32 devices)

48 Sync data transfer ports
(via 16 SC-SDT devices)

Flexible Backplane Connectivity

Dual RJ45 Connectors
Model 1:   AC Power
Model 2:   DC Power
Model 10: DC Power (2 PS)

SC Backplane (4x50-pin amp)
Model 4:   AC Power
Model 5:   DC Power
Model 11: DC Power (2 PS)

UAS Backplane (6x50-pin amp)
Model 7:   AC Power
Model 9:   DC Power
Model 12: DC Power (2 PS)

MIX AND MATCH AS NEEDED

SpectraComm SERIES

	SPECTRACOMM ENCLOSURES	SC 2000 SHELF	SC 5000 SHELF	RUS Accepted
LINE-BY LINE SERIES Single Slot, multi-slot and multi-blade				
SC 202 Modem (Bell 202)	✔	✔	✔	✔
SC V.34 Dual Modem	✔	✔	✔	✔
SC V.28.8/33.6 Modem	✔	✔	✔	✔
SC V.34 4-Port Modem	✔	✔	✔	✔
SC V.34 DBU Modem	✔	✔	✔	✔
SC 500A DSU	✔	✔	✔	✔
SC 521A/S DDS DSU	✔	✔	✔	✔
SC 553 T1 DSU	✔	✔	✔	✔
SC 611/613 HDSL DSU	✔	✔	✔	
SC 700 Series HDSL DSU	✔	✔	✔	
SC 800 T3 DSU	✔		✔	✔
SC SRM-6 Multiplexer		✔	✔	✔
SC M1:3 Multiplexer			✔	✔
IP SERIES Single-slot and multi-slot				
SCIP-MR1 T1 Router	✔	✔	✔	✔
SCIP-T1 Router	✔	✔	✔	✔
SCIP-E1 Router	✔	✔	✔	
SCIP-DSL.bis (G.s) Router	✔	✔	✔	✔
SCES 9-Port Switch	✔	✔	✔	✔
SCES 18-Port Switch			✔	✔
SC-ADT 8-Port/16-Port Async	✔	✔	✔	✔
SC-ADT 32-Port Async			✔	✔
SC-SDT 3-Port Sync	✔	✔	✔	✔
5000 SERIES Single-slot, multi-slot and multi-blade				
SC Manager (5000 Series)			✔	✔
SC 5001 T1 LTU			✔	✔
SC 5002 E1 LTU			✔	✔
SC 5034 DSE			✔	✔
SC 5506 OCU-DP			✔	✔
SC 5516 DS0-DP			✔	✔
SC 5520 DSE			✔	✔
SC 5553 DSE			✔	✔
7000 SERIES Single-slot, multi-slot and multi-blade				
SC Manager (7000 Series)			✔	
SC/UAS 7001 LTU			✔	
SC/UAS 7616 3-loop IDSL			✔	
SC/UAS 7626 6-loop IDSL			✔	
SC/UAS 7624 12-loop IDSL			✔	

GLOBAL APPLICATION SUPPORT

General DataComm

The Best Connections in the Business

www.gdc.com/products

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