

SNMP-Managed All Rate DSU

Highlights

- Connects to DDS, DDS with Secondary Channel and 64 kbps Clear Channel.
- Capable of Point-to-Point, Multi-Point and LDM (wire-line) operation.
- Supports Receive, Internal or External Timing.
- Capable of Programmable RTS/CTS delays.
- Provides Circuit Quality Measurements for: Jitter, Receive Level, Transmit Level, Bipolar Violations and Round Trip Delay.
- Provides DTE Interface status and alarms.
- SC521A/S capable of providing Sealing/Simplex current.
- SC521A Diagnostics perform Standard Loopbacks, Telco Loopbacks and V.54.
- SC521A/S Diagnostics perform Standard Loopbacks, Telco Loopbacks, V.54, and can initiate a CSU Loopback (current reversal).
- High or low density rackmount packaging for easy installation in a variety of GDC shelves and enclosures

Overview

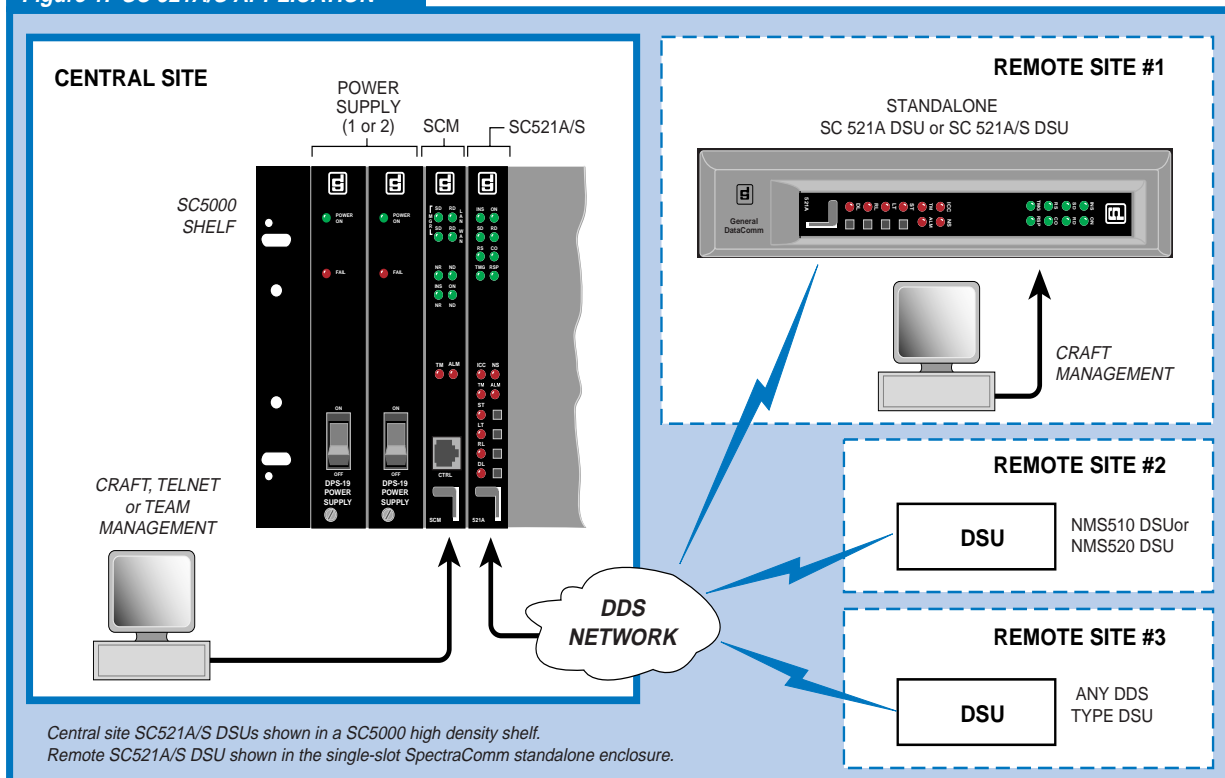
The SC521A and SC521A/S DSUs are multi-rate data service units capable of operating in standard Dataphone Digital Service (DDS) mode, DDS with a secondary channel (DDS/SC) mode, 64 kbps Clear Channel mode, and Wire-line mode. The DSUs can support DTE data rates of 0.6, 1.8, 2.4, 4.8, 9.6, 19.2, 56.0, and 64.0 kbps in full duplex operation over four-wire private lines.

Both models of the DSU have the same basic operational capability. The SC521A/S adds a Sealing/Simplex current option which provides a 4mA DC current on the network interface to keep the relay path clean. The SC521A/S also supports a craft interface when installed in a SC5000 shelf.

Scalable and Flexible

The SC521A and SC521A/S DSUs are a 7-inch by 9.5-inch (178 mm by 241 mm) cards that conforms to GDC SpectraComm shelf/enclosure systems. Both DSUs are compatible with the remote NMS510 and NMS520 DSUs, and can pass data to any existing DDS-compatible DSU. The SC521A and SC521A/S can also function as a remote to the SC5520 DSE. Remote units can be managed locally or via the SCM at the central site. *Figure 1* shows the DSUs in a typical network application.

Figure 1: SC 521A/S APPLICATION





Features & Benefits

- Connects to DDS, DDS with Secondary Channel and 64 kbps Clear Channel
- Capable of Point-to-Point, Multi-Point and LDM (wireline) operation
- Supports Receive, Internal or External Timing
- Capable of Programmable RTS/CTS delays
- Provides Circuit Quality Measurements for: Jitter, Receive Level, Transmit Level, Bipolar Violations and Round Trip Delay
- Provides DTE Interface status and alarms
- SC521A/S provides Sealing/Simplex current.
- SC521A Diagnostics perform Standard Loopbacks, Telco Loopbacks and V.54.
- SC521A/S Diagnostics perform Standard Loopbacks, Telco Loopbacks, V.54, and can initiate a CSU Loopback (current reversal).
- Configurable data rates via card option switch, TEAM software, or VT100
- Selectable Synchronous data rates: 64, 56, 19.2, 9.6, 4.8 and 2.4 kbps
- Selectable Asynchronous data rates: 19.2, 9.6, 4.8, 2.4 and 1.2 kbps
- Configurable as a master or remote DSU via card option switch.
- Master DSU can add remote DSUs (point-to-point operation).
- Master DSU can auto-detect remote unit type as NMS510, NMS520, SC521A, or SC521A/S.
- When DSU is installed as a remote, capable of emulating the NMS510 or NMS520.
- Capable of inband diagnostic support with the NMS520 remotes.
- Fully compatible with master SC 5520 or with remote NMS 510, NMS 520 or SC 521A.
- Virtual mapping of P, L, D in a master SC521A.
- Can be managed via TEAM, Telnet or craft connection when co-located with the SCM in the SC5000 shelf.
- Can also be managed via a craft connection at the rear panel of the SpectraComm AC or DC standalone enclosures, SC 5000 shelf or SC 2000 shelf.
- TIA/EIA-232-F and V.35 DTE onboard interfaces.
- EIA530 or DRA (Data Rate Adapter) plug-in options.
- Supports power supply alarms to the SCM from the SC2000 shelf.
- Supports AutoConfig via SCM.
- Permits a mixture of master and remote DSUs in the same SC 5000 shelf.
- Supports sequential or broadcast firmware downloads to master or remote DSUs in the same shelf via the co-located SCM.

Physical Specifications

Single-slot Blade

Width: 178 mm (7.0 in)
Height: 21 mm (0.81 in)
Depth 241 mm (9.5 in)
Weight: 0.28 kg (10 oz)

Environmental Specifications

Non-Operating

Temperature: -40 to 70 degrees C (-40 to 158 degrees F)
Relative Humidity: 5% to 95%
Altitude: 0 to 12,191 m (40,000 ft)

Operating

Temperature: 0 to 50 degrees C (32 to 122 degrees F)
(Derate by 1 deg C/1000 ft above sea level)
Relative Humidity: 5% - 95% non-condensing
Altitude: 0 to 3,047 m (0 to 10,000 ft)

Electrical Characteristics

Power (AC or DC), voltage, frequency, and fusing determined by your SpectraComm shelf or enclosure

Power Dissipation: 4 Wattsmaximum (card only)

Compliance

Safety: UL Approved

NEBS Level III Certified

Telco: FCC Part 68 Approved

Quality Assurance: ISO 9001: 2000 Certified

Service Specifications

Range at line data rates	Distance using 26 ga cable
2400 bps	11.5 mi (18.5 km)
4800 bps	8.7 mi (14 km)
9600 bps	6.1 mi (9.8 km)
19200 bps	5.0 mi (8.1 km)
56000 bps	3.6 mi (5.8 km)
64000 bps	3.2 mi (5.2 km)

Operational Specifications

Models

SC 521A
SC 521A/S (with sealing current option)

Data Rates

Synchronous:
2400, 4800, 9600, 19200, 56000, or 64000 bps

Asynchronous:
600, 1200, 1800, 2400, 4800, 9600 or 19200 bps

DTE Interfaces

Built-in: TIA/EIA-232-F or ITU-T V.35 interfaces

Optional: EIA-530 Interface

DTE Line Data Rates

Data rates	RTS-CTS delay (synchronous)
2400 bps	8 ±0.4 ms
4800 bps	4 ±0.2 ms
9600 bps	2 ±0.1 ms
19200 bps	1.0 ±0.05 ms
56000 bps	0.35 ±0.02 ms
64000 bps	Constant carrier

Operation

DDS, DDS/Secondary Channel:
Point-to-point (full- or half-duplex)
Multi-point (full duplex)

Customer-owned:
Point-to-point (full- or half-duplex)

Signal format:
Serial, synchronous or asynchronous, binary

Character format: 8 - 11 bits / character

Overspeed: 1 or 2.3%

Signal encoding: Bipolar, return to zero

Transmitter power (2400, 4800,19200, 56000 or 64000 bps): 6.0 dBm maximum (50% duty cycle, random bipolar sequence, 135 ohm impedance

Transmitter power (9600 bps): 0 dBm maximum (50% duty cycle, random bipolar sequence, 135 ohm impedance

Transmit timing: Receiver (slave/network), internal (DSU) ±0.01%, or external (DTE - can accept external clock up to ±0.02%)

Receiver:

Dynamic range: 48 dB extended range at 56 kbps
Acquisition time: 200 ms maximum
Release time: 1 second maximum

Communication line:

DDS or 4-wire, nonloaded, metallic lines (19 - 26 ga)

Terminating impedance: 135 ohms ±20%

